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EDITORIAL COMMENT

N. A. R. D. IN CONTEMPT, APPEALS.

Ruling upon a technicality, a Chicago judge has declared the National Association of Retail Druggists, Secretary Wooten and five firms of wholesale druggists guilty of contempt of court for defying a temporary injunction restraining them from withholding supplies from a retail druggist of Chicago, the complainant in the case. Particulars are given in a dispatch from our Chicago correspondent, printed on another page. The officers of the N. A. R. D. believe they have a strong case, and have already entered an appeal against the judgment.

A GOOD TIME TO BUY PLASTERS.

At last accounts the war in the plaster trade had not reached the stage where either chromos or trading stamps are being given away with every purchase at 50 per cent. below list prices, but some fine bargains can undoubtedly be picked up in plasters and surgical dressings just now, if one manufacturer be properly pitted against the other in the plaster war. There never was so good a time as the present to lay in big supplies of medicated plasters and surgical dressings. The exclusive publication of the news of the disruption of the plaster combine, printed in the AMERICAN DRUGGIST for August 22, is supplemented by another story of the situation in this issue.

A NEW DISCOVERY MAY BE ANNOUNCED.

Our news columns have contained preliminary notices of the forthcoming annual meeting of the Society of Chemical Industry in this city next week. The meeting will be opened on Thursday, September 8, in the gymnasium of Columbia University, with an address on "The New Problems in Inorganic Chemistry," by the president, Sir William Ramsay, K. C. B., F. R. S. This address will doubtless embody some of Professor Ramsay's most recent researches into the nature of the radio-active elements and the new gases discovered by him. It would not be at all surprising if he should make some very important new announcement, and the members are awaiting the delivery of his address with considerable expectancy.

2c. FOREIGN POSTAGE.

We are glad to learn that the Postal Congress League has started a national movement for a two-cent foreign letter postage. If Great Britain finds it to her advantage to operate a two-cent letter post-service with her colonies it is plain that the United States would derive equal or greater benefits from the operation of a world service rate. The arrangement could be easily brought about by the adoption on the part of the United States Government of reciprocal postal treaties with foreign governments. This is a matter which might well be taken up for discussion at the meetings of our national druggists' associations. The export trade of the whole country would be benefited materially by the adoption of a universal two-cent letter rate. Wholesalers who have a large foreign business will need no urging from us to place themselves on record as favoring reciprocal postal treaties with foreign nations, but the force of an irresistible public opinion in favor of postal advancement, such as is proposed, should be brought to bear upon Congress through resolutions adopted by local, State and national organizations of retail druggists, and the matter is earnestly commended to the attention of such.

ARE THEY INCOMPATIBLE?

A perusal of the scientific papers presented at recent meetings of national scope leads one to the conclusion that papers on scientific subjects are no longer so carefully prepared and thought out as they were a decade or so ago. They do not impress one as likely to hand down the name and fame of their authors to posterity. Speculation into the reason for this apparent decadence would lead us into depths of philosophical inquiry beyond the scope of an editorial comment. For is it not true that present-day conditions point more and more to that ultimate separation of commercial and scientific interests which has been the burden of many a labored essay on modern tendencies in pharmacy? Why is it, so far as pharmacists are concerned, that sociality and science form so incompatible

a mixture? The comment of the representative of the New York Central Drug Association at the New York State Pharmaceutical Association in his report of the meeting at Brighton Beach pictures the situation in bold relief. Summing up the result of less than half an hour's discussion of a scientific question, the delegate, evidently a pronounced utilitarian, condemns the whole business as an utter waste of time, because "it would not add a single penny to their profits during the year." The social features of pharmaceutical meetings usually leave nothing to be desired, but as already remarked, sociality and science do not appear to mix well, so far as pharmacists are concerned. It is not so with industrial chemists, as the combined scientific and social functions of the New York chemists' associations amply testify. The chemist's existence is not any less trying than that of the pharmacist, and why is it that he can mingle a modicum of science with frothier matters and the pharmacist not?

Difficulties Encountered by Exporters.

American manufacturers of proprietary remedies who endeavor to create a market for their products in foreign countries are beset with many difficulties. Permission for the introduction of a given article into a foreign country has usually to be obtained from the Government. In the case of a proprietary remedy, the preparation is subjected to an analysis in order to determine the composition of the preparation and ascertain whether it is in the interests of the public health to allow it to be sold. The customs service has an inning at the article after permission for its sale has been obtained. The customs authorities fix the duty arbitrarily, their decision in the premises being governed largely by the contents of the preparation, special taxes being imposed in some instances.

To add to the difficulties in the way of foreigners who are striving to build up an export trade the Russian Government has recently decreed that manufacturers in making application for permission to sell their pharmaceutical products in Russia must accompany their requests and all specifications annexed thereto by translations into the Russian language properly verified. The matter has been brought prominently to the attention of manufacturing pharmacists and others by a letter from the Russian Ambassador at London to the Marquis of Lansdowne, the Lord President of the Privy Council, the text of which, together with a translation, is appended:

M. BENCKENDORFF'S COMMUNICATION.

LONDRES, le 29 Juillet, 1904.

MONSIEUR LE MARQUIS,—Il advient fréquemment que des industriels s'adressant au Conseil d'Hygiène du Ministère Impérial de l'Intérieur en vue d'obtenir l'autorisation necessaire pour la mise en vente en Russie de leurs produits pharmaceutiques, médicinaux ou hygièniques, présentent leur requête écrite en langue étrangère.

Le Conseil vient en conséquence de prendre une décision en vertu de laquelle toute requête du genre ci-dessus, ainsi que les pièces y annexées, devront être accompagnées de traductions en langue russe, dûment légalisées.

En recourant à l'obligeance accoutumée de Votre Seigneurie en vue de faire porter les dispositions ci-dessus à la connaissance des milieux interessés, j'ai l'honneur d'être, etc. BENCKENDORFF.

A son Excellence,
Monsieur le Marquis de Lansdowne, K. G.,
Etc., etc., etc.

THE TRANSLATION.

LONDON, July 29, 1904.

MY LORD,—It frequently happens that manufacturers, in addressing the Council of Hygiene of the Imperial Ministry of the Interior, with a view of obtaining the necessary authority to allow the sale in Russia of their pharmaceutical products, medicinal or hygienic, present their requests in a foreign language.

The Council, therefore, has decided that every request of the foregoing nature, together with all specifications thereto annexed, must be accompanied by translations into the Russian language, duly verified.

In having recourse to the accustomed courtesy of your lordship, that this decision may be made known to the interested parties, I have the honor to be, etc. BENCKENDORFF.

To his Excellency the Marquis of Lansdowne, K. G., etc., etc.

It will be seen, therefore, that it will be to the advantage of American manufacturers to have an expert in the difficult Russian language at their service if they desire to obtain a share in the trade of the vast domain of the Czar.

Too Long Drawn Out.

In a recent number we took occasion to express a lively hope that, in preparing the programme for the Kansas City meeting, the Council of the American Pharmaceutical Association would endeavor to concentrate the work of the body into as few days as possible, so that those members who attend the meeting for the work, rather than the social features, might be able to cover the important meetings of the association without being compelled to remain over and participate in social features for which they have no time, even did they have the inclination. This suggestion, if it had any effect at all, seems quite the reverse of that intended, for while it has been customary for the programme to be so adjusted as to conclude with a general session on Saturday morning, the programme laid out for the Kansas City meeting embraces a final general session on Saturday afternoon.

Had our contention for greater concentration been merely the expression of individual opinion, we should not have been in the least surprised to find it overridden, but we are not alone in this desire to concentrate the work of the Association for the greater convenience of the workers, for that desire found definite and clear enunciation in the resolution proposed by Mr. Hallberg and adopted at the meeting last year, which reads as follows:

> *Resolved*, That the Council, in formulating the programme for the annual meeting, endeavor to concentrate the session so that the time consumed for the meeting shall be limited to the least number of days.

It is somewhat a matter of surprise, in view of this clear enunciation of the wishes of the Association, as expressed in the resolution, that the Council, which is presumably the servant and not the master of the Association, should take this particular occasion to extend the programme beyond even the usual amount of time devoted to it. It is not to be supposed, of course, that the Council wishes to place itself in the attitude of deliberately ignoring the expressed wishes of the Association, but the bald facts, as indicated by the records, cannot but convey that impression. We have here on page 115 of the Proceedings of last year the resolution asking for concentration of the session. The first programme adopted after the passage of this resolution, so far from concentrating the session, extends it to cover an additional half day. It seems to us quite within the limits of possibility that the members may take this matter in their own hands at the Kansas City meeting and so alter the programme, as to meet with their wishes as indicated in the resolution even at the expense of the feelings of the members of the Council.

The Louisiana Purchase Exposition.

We devote a great deal of space in this issue to a review of the pharmaceutical aspects of the St. Louis Purchase Exposition. The limitations of time and space prevent this review from being as complete and as elaborate as we should like to have made it, but we feel confident that a perusal of it will prove of interest to every pharmacist and of real value to all our readers who take occasion to visit this latest and largest of the world's great expositions.

The fact that the attendance at the Exposition during the first four months has been less than anticipated by no means implies any lack of real merit on the part of the Exposition. Those visitors who have gone with an open mind and who have devoted a sufficient amount of time to the Exposition to learn something of the immense number and variety of the exhibits

shown, and who have taken the trouble to digest this information, are unanimous in their verdict that, in the highest sense, the Exposition is a success.

That American pharmacy has not made a larger and more impressive showing cannot but be a source of profound regret to all who are interested in the development and growth of our foreign trade. The avidity with which foreign manufactuerers have embraced the opportunity to present their goods to our view is the best evidence of their appreciation of the American market. Unfortunately, the American drug and chemical industries have not presented the American side of the case with equal impressiveness, for, though excellent as individual exhibits, the displays made are so small in number as to fail in impressiveness as a whole.

The collective exhibit of German chemical industry, organized by the Prussian Board of Education, is a model which our own Government and our own manufacturers might well study, with a view to future expositions. In another line, the German Government educational exhibit presents the educational aspects of medicine in an equally impressive and instructive manner, and the prospective student who sees the methodical, scientific and well-ordered manner in which the advantages of German educational institutions are placed before the visitor cannot but be impressed with the excellence of the institutions that have rendered such an exhibit possible. This educational exhibit includes a collection of scientific instruments covering practically every aspect of experimental and applied science, and the admirable introduction to the well-printed and copiously illustrated catalogue of this exhibit issued by the German Government presents strongly the claims of the German instrument manufacturer to the consideration of the scientific world. The German hygienic exhibit is also a veritable model of collective endeavor, including, for instance, a collection of specimens of all the various sera manufactured in Germany, whether made by private enterprise or by public officials.

Another nation, the Japanese, also impress the casual visitor with the multitude and the excellence of their exhibits in every department of industry. When we contemplate the fact that these island people have had but half a century of civilization, or, at least, of Western civilization, we cannot but be profoundly impressed with the talent, the industry and the perseverance which have enabled them to equal, and in many cases outstrip, the Western nations in their own fields.

Another people whose exhibits surprise one, alike by their quality and their quantity, are our neighbors of Brazil. The Government building erected by Brazil is one of the handsomest and most admirably planned of all the buildings erected by the foreign governments. The displays made in both the crude products and the manufactured articles show a wealth of resource and a mechanical ability to utilize those resources which will strike many Americans with surprise. The commissioners from this republic seem particularly desirous of giving the widest possible dissemination to their knowledge of Brazilian resources, and extend toward the inquirer a degree of courtesy which is in distinct contrast with the treatment which he meets with from a few of the foreign commissioners.

However much the American pharmacist may deplore the wasted opportunities of our manufacturing chemists at this Exposition, all Americans, scientific and commercial alike, will find much to commend in the admirable exhibits shown by the United States Government. We have given at some length a description of the Government exhibits which are of special pharmaceutical interest, but there are other exhibits, such, for instance, as the Brigade Hospital, located near the Liberal Arts Building, which cannot but prove interesting to pharmacist and physician alike. Indeed, no single building on the grounds has relatively so large a number of visitors, and no other exhibits attract so much attention as do those made by the United States Government.

The characteristic American question has been put regarding this Exposition: Does it pay? The answer, given unhesitatingly and emphatically, is: Yes! it pays.

It pays, not in financial returns, possibly not even in extended commercial relations; but its most remunerative feature to the American people is the educational effect which such a great exposition exercises on the minds and imaginations of the American people as a whole. Whatever may be the character of the visitors later on, during August at least the attendance was largely drawn from the far South and Southwest. The eager youths and maidens, seeking information at cost of much toil, and, in many cases, even at the cost of personal privation, cannot but have been broadened and improved by the opportunity of observing here the output of a whole world, the accumulated ingenuity of all the ages, as expressed in the telautograph, wireless telegraphy and the thousand and one mechanical and scientific wonders which contribute to make up the sum of human accomplishment and endeavor in this twentieth century. These receptive minds will carry back to the remotest hamlet and to the furthest village impressions which will be potent factors for good both in the utilitarian and the artistic aspects of their lives, and the nation will reap a rich reward for its expenditures, in the growth of a broader and a more intelligent spirit on the part of its citizens.

The Origin of the ℞ Sign.

"Recipe" means "take thou," and it is stated in the new part of the Historical English Dictionary to be a word used by physicians (abbreviated to "R") to head prescriptions, and hence applied to these and other formulæ. Under the letter itself the same authority says practically the same thing, but gives no countenance to the picturesque fancy that the "R" is or ever was an invocation to Jupiter. "Xrayser" of the *Chemist and Druggist* thinks it was Dr. Paris who started that notion, but he is not aware that either he or any of his disciples has furnished any fragment of evidence in support of it. The dictionary traces the word back in English to about the year 1400, when it is found in Lanfranc's "Cirurg." thus: "Recipe litargium as myche as thou wolt." About 1500 in the "Babees Book" in the Harleian MS. it appears apart from medicinal association, thus: "Recipe brede gratyd and eggis." What more natural than that when the physicians came to write out their instructions to their attendant apothecaries they should have contracted the "Recipe" to "R"? It is, at any rate, most unlikely that between themselves they would have gone through the performance each time of solemnly appealing to a heathen deity in whom they certainly had no faith.

The Forthcoming Pharmacopoeia.

It is reported that the pardonable curiosity which has been felt by many pharmacists regarding the work of the Committee on Revision of the U. S. Pharmacopœia is to be gratified soon, for the Board of Trustees has at last determined to permit some information to be given out regarding its proceedings. The attitude of the board on this matter of secrecy has been quite incomprehensible to those interested. Many in the trade have felt that since the work was being done for the good of pharmacy, and not for any commercial gain, the greatest possible degree of publicity should be given to the finished work, to every step of it. Inquirers have, however, been told repeatedly that it would be destructive of confidence between the several members of the committee if the deliberations of the committee were made public.

[Written for the American Druggist.]

A QUARTER CENTURY OF PHARMACEUTICAL EDUCATION.

By C. S. N. Hallberg, Ph. G., M. D.

Chicago, Ill.

When Dr. Samuel Johnson was preparing to visit London he is reported to have said that his mother had told him that in the metropolis there were two sets of people; those who gave the wall and those who took it. In the same way, it may be said of those engaged in the drug business in this country that there are two sets of persons: those who favor pharmaceutical education and those who do not.

A RETROSPECT.

While the present generation of pharmacists have been required to attain some qualification for practice, the fact remains that they are divided into two distinct groups; one a preponderating majority whose sole ambition is to become registered, the other a decided minority which believes in education and still clings to the hope that those thoroughly grounded in the sciences will yet supervene in the practice of pharmacy as in all other technical pursuits and professions.

With the advent of pharmaceutical education by the enactment for Iowa in 1880 great impetus was given to pharmaceutical education. While prior to that period a number of colleges of pharmacy in the larger cities had been fairly well patronized it required regulating laws to make the want of education more general, and to meet this demand independent pharmaceutical schools were established and by many of the universities, until there are now about 80 institutions offering pharmaceutical instruction in the United States.

That the instruction offered now is vastly improved over that afforded a quarter of a century ago is apparent to any one who has given the subject any consideration. With the possible exception of chemistry, but little laboratory work was required, and that for the most part optional; microscopy and practical work in pharmacy have been introduced since that time. The courses have been lengthened and strengthened, evening instruction almost abandoned, and the work in every way amplified to suit modern conditions by adapting the methods of instruction in accord with the advance and progress of science. That this was largely necessitated by the changed conditions in the drug business, and especially through the curtailment of the apprenticeship system, does not minimize the fact of the improvement, nor that the advanced status was influenced, if not attained, through the affiliation of some of the older colleges of pharmacy with the State and others of the larger universities. The competition consequent on the establishment of so many new institutions largely influenced the advanced courses and it must be said also caused inadequate support of many of these through the low standard and uncertain tenure of some of these schools, located at cross-roads as purely commercial ventures conducted on the business college plan.

That some of these schools do good work in bringing education among a class that otherwise might go without it may be conceded, although this may be equally well accomplished through a good home-study course; but the danger lies in the fact that these small schools assume too much and, no doubt, often succeed in making many otherwise ambitious students believe that they have reached their goal by being graduated by them instead of causing them to try and complete their course in some older and better institution.

> Delightful task! to rear the tender thoughts,
> And teach the young idea how to shoot!

Of course, in this free country any one thinks he can start a school; and so he may; but a college of pharmacy can be established only through thorough organization, and it is of very slow growth, indeed. Besides, it requires men especially adapted to the work of instruction, and these cannot be found everywhere; even the teachers in the sciences—chemistry, botany and materia medica—cannot be drawn with advantage from medical and other institutions, as they should preferably have pharmaceutical experience and training in order that they may be able to give the proper "bent" to their instruction so essential to the student in pharmacy.

But it is in the person professing to teach pharmacy that the small local schools are most seriously at a disadvantage, since the experience and opportunities required to produce a full-fledged pharmacist thoroughly familiar with all phases of the practice are, as a rule, found only in a metropolis, and largely, also, through its cosmopolitan population, medical and lay. It is here, where the medical life is most active, that the pharmacists become familiar with the vast materia medica, the thousand and one remedial agents as they come and go and where they meet the many problems of medical practice, hygiene and sanitation, essential to the successful practice of pharmacy in this glorious twentieth century.

While, of course, every institution thinks it is as good as any other, the time will come when there will be a gradation of these schools. With extension of courses and graduation requirements there is no reason why these local schools should not be content with doing the preparatory work, the first or second year to be taken in a local school and then the last year or the last two years to be taken in a central school having a three year course. This is practically done now in the medical colleges, and with careful adjustment of the advanced standing such arrangement would be beneficial to all—to the student, who would have the advantage of completing his course under the most mature instructors; the local school would be relieved of the expense and difficulties of maintaining specialists as instructors and the central school would receive such added support as it is entitled to through its larger facilities. Some similar plan might be adopted to give advanced standing to pharmacists of mature years and experience who may have taken a home-study course, as careful entrance examination may warrant, as is now done by the technical schools for the International Correspondence School, and also *in absentia* by the leading universities.

THE FUTURE OF PHARMACEUTICAL EDUCATION.

That the pharmacy schools will keep on advancing their courses is self evident. Any college which does not improve its work of instruction is not a true educational institution; it must move forward or it will stagnate. The work for the future pharmacists must be along the same lines it has always been—to serve medical practice. With the *prevention* of disease rather than its *cure* as the medical doctrine of the present, pharmacy must keep pace if it would survive. The preparation and even the compounding of medicines are rapidly going over to the machine, and the pharmacist must broaden his field, he must qualify as the physician's first aid in chemical and clinical diagnosis in bacteriological and light work. The pharmaceutical schools must institute and extend such courses; otherwise the medical schools will be compelled to add them to their already overburdened curricula.

THE FUNDAMENTAL QUESTION.

The fundamental consideration concerning any discussion of technical education—the admission requirements—has been here purposely ignored. This is a question which must be regulated through law.

The advance made by pharmaceutical education during the past quarter of a century has been briefly shown. What progress has been made in pharmaceutical legislation? Practically none!

The pharmacy laws, with the exception of the graded classes distinction and the prospective educational requirements for the State of New York, are substantially what the experimental act of Iowa was in 1880.

No advance in educational requirements can be made until such requirements are incorporated in the Pharmacy Acts.

The pharmaceutical faculties and pharmacy board members at the meeting in Kansas City next month should appoint a joint committee to take this long-neglected subject under consideration and try to report on some plan for united action to remedy this fundamental weakness in legislation and education.

(Written for the American Druggist.)

WATER ANALYSIS.

By James O. Jordan, Ph.G.,
Boston, Mass.

(*Continued from page* 111.)

HARDNESS (*continued.*)

Hardness may be estimated by the following method devised by Hehner:

Reagents.—Prepare $\frac{N}{50}$ solutions of sulphuric acid and sodium carbonate.

Solution of Erythrosine.—Dissolve 0.1 Gm. of erythrosine in 1 liter of water.

Process.

Temporary Hardness: Measure 100 Cc. of water into a bottle and add 2.5 Cc. of the solution of erythrosine and 5 Cc. of chloroform. Run in the dilute acid slowly and cautiously from a burette, shaking after each addition, until the pink color disappears. Each Cc. used represents one part of calcium carbonate or its equivalent in 100,000 parts of water. Phenacetolin and lacmoid may be used as indicators in place of erythrosine, but it is necessary to make the titrations in hot solutions, as they are sensitive to carbon dioxide. The chloroform is essential with erythrosine for the removal of the nonionized iodeosine molecule as it is formed by the acid, thus insuring a sharp end reaction. (Ellms: *J. Am. Chem. S.* 21, 1899, p. 359).

Permanent Hardness: Add to 100 Cc. of the water contained in a platinum or nickel dish more than enough of the solution of sodium carbonate to decompose the dissolved calcium and magnesium sulphates, chlorides and nitrates; ordinarily 50 to 100 Cc. suffices. Evaporate to dryness and extract the residue with distilled water; filter through a small filter. Titrate as before. The difference between the number of Cc. of solution of sodium carbonate employed and the acid required for the residue will give the permanent hardness.

If the water contained sodium or potassium carbonate there would be no permanent hardness and more acid would be required for the filtrate than corresponds to the quantity of sodium carbonate added. From this excess of acid the amount of sodium carbonate present in the water may be determined. By the direct titration any alkali carbonate present would be calculated as temporary hardness; it should therefore be calculated as calcium carbonate and deducted from the results given by titration to obtain the true temporary hardness.

RESIDUE.

The solid matter left upon evaporation of water consists of inorganic and organic substances in solution and also in suspension, the quantity varying with the surrounding conditions. The list of possible mineral substances in solution other than the freely soluble alkaline and alkaline earth compounds includes magnesium and calcium carbonates, calcium sulphate and traces of silica, silicates and iron. The presence of comparatively large amounts of mineral substances in water, while, perhaps, not injurious to the human system when used for drinking purposes, may cause inconvenience and financial loss when employed for domestic use. Considerable amounts of iron exclude water for dyeing and laundry purposes, and such water is held to be injurious when used constantly as a beverage. Abnormally hard waters containing excessive amounts of calcium or magnesium compounds, or both, are unsuitable for use in steam boilers.

Determination of Residue and Loss on Ignition: Heat and weigh a platinum dish and then measure into it 100 Cc. of the water and evaporate to dryness on a water bath or in an air bath; then place the dish in an air bath or water oven at the temperature of boiling water for two hours. Cool the dish in a desiccator and then weigh rapidly (on account of the possible hygroscopic nature of the residue). The gain in weight in milligrams represents the number of parts of solid matter in 100,000. For surface waters and waters of great purity 200 Cc. should be taken for the evaporation. If platinum dishes of 100 or 200 Cc. capacity are not at hand the small dishes like those employed for the determination of total solids in milk may be utilized, the water being replenished as evaporation proceeds from the balance of the measured quantity.

Loss on ignition: Heat the dish on a platinum or pipe stem triangle to dull redness. Do not prolong the heat and note carefully any change. Cool the dish in a desiccator and weigh as before. The residue is the "fixed solids" and the weight minus that of the residue represents the volatile matter. The heating decomposes not only the organic matter, but the nitrates, nitrites, combined carbon dioxide, ammonium salts, magnesium chloride, expels water of crystallization from calcium sulphate and with high temperature volatizes sodium and potassium chlorides. The organic matter under the influence of heat may give off odors suggesting possible contamination. There may be more or less blackening, that from sewage contamination disappearing rapidly, while with waters containing vegetable matter from leaves or wood the blackening continues for some time. There is no appreciable odor or blackening from waters with minute amounts of organic matters.

ODOR.

An acceptable drinking water is odorless, although many normal waters possess a marked unpleasant odor. The presence of odors, while not appealing to the esthetic sense, need not necessarily condemn a specimen from the standpoint of healthfulness. Odors are due to a variety of causes and the same odor may be described by different persons in a different manner. Most odors are from organic sources and have their origin in living or dead organisms. Many colored surface waters give an odor persisting after heating, which is variously described as "vegetable," "grassy," &c. Odors due to dissolved gases will disappear on boiling if the source of their generation is removed. Varieties of algæ are sources of odor. The removal of the algæ by filtration before heating the water, and subsequent boiling, effectually removes the odor. Stored normal waters occasionally develop a mouldy odor and the presence of diatoms and algæ produces an odor sometimes described as mouldy. Waters may have an odor of hydrogen sulphide from the reducing action of certain bacteria upon sulphates. Sewage may indicate its presence, if in sufficient amount, by a characteristic odor; if more dilute there is a persistent mustiness. Odor alone, however, would not be sufficient indication for this source of contamination.

Process.

Put 200 to 250 Cc. of the water in a wide-mouth flask (preferably one of the Erlenmeyer type), cover it with a watch glass and heat to about 45 degrees C. Remove the flask, and while still covered rotate it briskly; then displace the cover and immediately place the nose at the mouth of the flask. The odor of the water, unheated, may also be noted by vigorously shaking the original container when about half emptied of its contents, removing the stopper and quickly putting the nose at the mouth of the bottle. The odor after heating may be the same as that of the water when cold or it may vary. The odor is designated according to its predominating quality.

COLOR.

The presence of color in water is not an indication of impurity, and, inversely, a colorless specimen may be unsuitable for domestic use. The organic coloring matter of leaves, grasses, mosses, decayed wood, &c., is the usual source of color of surface waters. Not all waters of this class, however, are colored. Most ground waters are colorless. Occasionally they are colored from percolating through peat or from iron in solution. The latter on oxidizing acquires a reddish-brown tint. The specimen then appears milky; subsequently the finely divided hydrated ferric oxide precipitates.

Process.

Note the appearance of the water in a colorless glass tube (one of the Nessler tubes may be employed) held over a piece of white paper. The tube is best reserved for this special purpose, as any alkali from imperfect washing of the Nessler solution affects the color of the specimen.

The sample may be reported as color "absent" or "yellowish," according to the conditions, and if colored, and so desired, the degree of coloration ascertained by comparison with the standards employed in the ammonia determinations, designating the color in tenths, according to the volume of dilute solution of ammonium chloride employed.

METALLIC IMPURITIES.

Besides iron, which not infrequently occurs naturally in waters, the presence of other metals is occasionally detected. These ordinarily result from the corrosive action of the water upon the metal service pipes. Thus most waters have a varying solvent action upon lead. The presence of gases, especially oxygen, increases this solubility, which is also accelerated by carbon dioxide, ammonium compounds, nitrates and uncombined acids. On the other hand, certain agents, as silica, carbonates, bicarbonates and chlorides, exert a retarding influence. Water also has a slight solvent action on iron, which is increased by carbon dioxide, acids, and certain salts. Iron pipes are often lined with zinc, and this latter metal is also dissolved by water, oxygen and carbon dioxide being potent agents in this solvent action. Zinc and copper also find their way into some waters from the brass pipes now extensively used for house piping. Ordinarily, however, lead is the only metal which is desired detected or estimated.

Detection and Estimation of Lead: To 100 Cc. of the water in a tall glass cylinder add a few drops of hydrochloric acid and 10 Cc. of strong hydrogen sulphide water. If lead is present to the amount of 0.3 parts per million or more, a distinct blackening follows, which is more apparent beside a comparison tube prepared with distilled water. To the first tube add 1-2 Cc. of a strong, fresnly prepared solution of pure potassium cyanide. If the blackening disappears, the presence of copper is indicated. Lead when present may be confirmed by the method proposed by Harvey (*The Analyst*, April, 1890), which he claims will detect the presence of 0.3 parts per million. Place 250 Cc. of the water in a tall jar and dissolve in it by agitation Gm. 0.1 of potassium dichromate. Lead in the above quantity, or more, will cause a turbidity within a short time and if the jar is set aside undisturbed for 12 hours a precipitate will settle. The experiment is more pronounced beside an equal amount of pure water treated in same manner with potassium dichromate. If the above tests fail to show the presence of lead, it is, if contained in the water, in less quantity than 0.3 parts per million, and in order to determine its presence or absence concentration is necessary. Two to three liters of the specimen are placed in a porcelain dish, acidulated with a few drops of hydrochloric acid and evaporated to a small bulk (50 or 100 Cc.). The liquid is then saturated with hydrogen sulphide and the precipitated lead sulphide collected upon a small filter paper and washed. It is then dissolved by pouring boiling dilute nitric acid upon the filter, washing with distilled water and evaporating to dryness. If copper was also present in the water it would be precipitated with the lead sulphide.

The copper may be separated with a fair degree of accuracy by adding to the concentrated water, before passing in the hydrogen sulphide, sufficient strong solution of potassium cyanide to render the liquid alkaline; then saturate with hydrogen sulphide, collect the precipitate of lead sulphide on a filter paper (reserving the filtrate). Dissolve the precipitate in boiling dilute nitric acid, wash and evaporate as before. The residue in either event is dissolved in distilled water, a drop of hydrochloric acid added, and made up to 50 Cc. Five to 10 Cc. of this liquid is diluted with distilled water to 40 Cc., if only Nessler tubes are available, or if 100 Cc. tubes are at hand, to 90 Cc. Add 10 Cc. of strong hydrogen sulphide water and mix by shaking. A blackening shows the presence of lead; if the color is intense a smaller amount of the concentrated liquid should be used; in the event of no blackening, with 10 Cc. of the concentrate, add hydrogen sulphide water to the balance of this liquid. If lead is present the quantity may be ascertained by comparison with tubes containing distilled water, a trace of hydrochloric acid, hydrogen sulphide water and known quantities of lead. The lead solution is prepared by dissolving Gm. 0.160 of lead nitrate in a liter of distilled water; each Cc. contains 0.1 Mgr. of lead. A comparison scale is made by measuring into separate tubes known quantities of this solution, diluting largely with distilled water, adding a trace of hydrochloric acid and finally hydrogen sulphide water to the same bulk as the original tube. The comparisons are made by holding the tubes over a white surface and looking through the whole depth of the liquid. After adding hydrogen sulphide and shaking, the readings should be made as rapidly as possible, because of the separation of sulphur, which renders the mixtures turbid. From the matching of colors the amount of lead equivalent to that found in the water may be calculated.

Example: Five Cc. of the concentrated liquid equalled the amount of lead in 4 Cc. of the standard solution. As this 4 Cc. = 0.4 Mgr. of lead, then $0.4 \times 10 = 4$ Mgr. Two liters of water were evaporated: Then 1 liter, or 1,000,000 parts = 2 Mgr., and 100 Cc., or 100,000 parts, 0.2 Mgr. of lead.

(*To be continued.*)

COMPRESSED TABLETS.[1]

By Henry Rodwell.

In a previous paper by E. White and the author of this paper oil of theobroma was recommended as the granulating and lubricating agent or excipient, which was to be applied in two ways—(1) in the form of an aqueous emulsion for such substances as do not form masses of a pill-like nature when moistened with water; (2) as an ether or ether-alcohol solution applicable to such substances as aloes and cascara, which do form tough masses with water. Cane sugar was recommended as the diluting material.

In the former communication some details were omitted which will be given here, together with such modifications of the general method as further experience has proved to be either advantageous or necessary.

GRANULATION.

The ease with which any material can be worked into tablets depends, as a rule, upon the degree of success attained in granulation. Certain modifications of the general method will be given, to be applied in special cases. Some remarks upon the general principles of granulation are necessary, however, before their use can be properly indicated. The cohesiveness of a tablet depends, in some degree, upon the interlocking of the granules on compression, but chiefly upon the inherent cohesiveness of the material. The tendency to cohere may be increased by the addition of sugar, glucose, or acacia. Sugar should be employed whenever possible, but since a comparatively large proportion is usually necessary for the purpose, its use is limited. When, say, 5 grains of medicament is to be presented in tablet form, especially if it is of the nature of phenacetin, aspirin, or quinine sulphate, the addition of sugar in sufficient quantity is not possible without producing too large a tablet. In the former paper the use of a small proportion of glucose was recommended as a means of making the material more cohesive and of allowing some reduction in the proportion of sugar. It has been found that by increasing the proportion of glucose to from 5 to 8 per cent. the sugar can be omitted entirely, and 5 grains of medicament presented in a six-grain tablet.

The following formula is typical:

	Parts.
Phenacetin	64
Starch	4
Glucose	6
Theobroma emulsion	13

The glucose may be incorporated by first mixing it with the emulsion in a mortar.

Good granules possess a certain degree of stability, showing no tendency to break down into powder under manipulation. When defective in this quality, gum acacia should be added in the proportion of from 5 to 10 per cent.

[1] Read at the annual meeting of the British Pharmaceutical Conference, August, 1904.

The following formula is improved in this way :

	Parts.
Reduced iron	16
Gum acacia	2
Starch	1
Sugar	4
Theobroma emulsion	2

The addition of gum acacia to the formula for Hutchinson's pills given in the previous paper is an improvement. Gum acacia is a necessary ingredient also in the formula for iron tablets, which will be given later; as might be expected, the presence of a dehydrated salt interferes considerably with the operation of granulation.

In applying the ether-alcohol form of the excipient two modifications are recommended for use on occasion : (1) The substitution of a weaker alcohol when granulation produced with the stronger alcohol is imperfect. The modification is employed in the following formula :

Opium	16 parts
Sugar	7 parts
Ether-theobroma	3 fl. parts
Alcohol (60 per cent.)	2 fl. parts

Mix the powders and add the liquids separately.

This modification can be adopted in most, if not in all cases when from the nature of the material the use of the aqueous emulsion is indicated; since granules prepared with the ether-alcohol excipient can be more quickly dried, a saving of time is in this way possible. (2) The reduction, in some cases, of the proportion of alcohol. The use of a volume of 90 per cent. alcohol, equal to that of ether-theobroma frequently necessitates the addition of a considerable proportion of sugar, which can be reduced if this modification is adopted. The following is an extreme example :

Cascara extract	16 parts
Ether-theobroma	3 fl. parts
Alcohol (90 per cent.)	0.5 fl. part

In the formula for cascara given in the previous paper 50 per cent. of sugar was necessary, in order to avoid overgranulation. In such cases as the above a little starch can be added with advantage.

DRYING THE GRANULES.

If the drying of granules is carried out in a room which is fairly warm and dry the application of heat will seldom be necessary. In no case is it necessary to subject the material to a higher temperature than 45 degrees C. No rule can be laid down, even in particular cases; but seeing how seldom heat is necessary, it is advisable, first, to try drying by exposure to the air. There is the danger with some substances of overdrying, thereby reducing the cohesiveness of the material. The weight of the dry granules will depend considerably upon the temperature at which drying has been conducted, especially if starch or such a crystalline substance as lead acetate is an ingredient of the mixture. To insure accurate dosage it is necessary in all cases to weigh the finished granules, adjusting the weight of the tablets accordingly. Two samples of ordinary starch powder heated in a water oven were found in each case to lose 10 per cent. of their weight; a similar loss resulted at a temperature of 45 degrees C.

DISINTEGRATION.

To bring about rapid disintegration of tablets which are composed largely of insoluble substances, 5 per cent. of starch powder should be added, applied either by dusting it over the dry granules, or, better, by adding it to the material before granulation. The addition of starch before granulation makes it necessary to add a larger proportion of the excipient; this is generally beneficial, the extra lubricant improving the finish of the tablets; this addition can be frequently made with advantage. The following formula for grey powder is an improvement on that given in the former paper. The extra lubricant makes it possible to produce tablets with a good surface by the application of a low degree of pressure.

	Parts.
Grey powder	16
Starch	4
Sugar	20
Theobroma emulsion	4

For remarks on the compression of this substance reference should be made to the former paper.

COMPRESSION.

In adjusting the degree of pressure due regard must be paid to disintegration. Increase of pressure *does* add to the good appearance of the tablets, improving the polish of the surface, and when the tablets are colored, making them darker and apparently more homogeneous in composition, but, unfortunately, with a corresponding increase in the time taken by the tablets to disintegrate. Good finish, with the minimum of pressure is, however, possible, and its achievement should be constantly aimed at.

One of the difficulties sometimes encountered is the cracking of the tablets after compression, but only in cases of imperfect granulation; it may, however, be caused by the presence in the material of coarse particles, especially crystals. This should be carefully avoided; all the ingredients should be in the finest possible powder. This is necessary, also, in the case of colored tablets, if an appearance of homogeneity is desired.

Another difficulty sometimes met with is adhesion of the material to the punches during compression; it results from a lack of cohesiveness in the material, the remedying of which has already been discussed. Should adhesion occur when granulation is satisfactory, showing generally that the material is sufficiently cohesive, the remedy will usually be found in more perfect drying. Various methods of correcting adhesion have from time to time been suggested, such as the addition of talc to the dry granules, or by spraying them with an ethereal solution of liquid paraffin, these substances serving also as lubricant. Talc, in very fine powder, has been found useful in cases of emergency, when time did not permit of more elaborate treatment; but its general use as a lubricant is not recommended, since it increases the liability to crack. If granules prepared with theobroma are found to require additional lubricant, 0.5 per cent. of talc will usually be sufficient. When talc is added to correct adhesion, as much as 2 per cent. may be necessary; this proportion should not be exceeded. Talc is most economically applied as follows: Spread the granules in a thin layer on paper and sift the talc over the surface, using a very fine sieve; mix roughly by lifting the corners of the paper, and complete by rotating in a large flask or bottle. In case of adhesion the punches should be washed with water, the lower punch being first removed for the purpose. If the punches are not kept well polished the difficulty will frequently arise from that cause; when not in use they should be immersed in liquid paraffin or paraffin oil.

As the result of further experimenting on iron tablets, the following formula has been adopted as a substitute for Pilula Ferri B. P.:

		Parts.
(*a*)	Dried ferrous sulphate	150
	Gum acacia	25
	Sugar	125
	Theobroma emulsion (acacia)	60

Granulate and dry thoroughly by the application of heat.

		Parts.
(*b*)	Sodium bicarbonate	150
	Theobroma emulsion (acacia)	35

Granulate and dry thoroughly with heat, and mix two parts of *a* with one part of *b*. Each 5-grain tablet yields on moistening 1 grain of ferrous carbonate.

Theobroma emulsion, prepared with gum acacia, is preferable in this case to one made with soap; the above calculations are based on one giving a 40 per cent. residue on drying. Absolute drying of the granules is necessary, otherwise the reaction between the salts takes place to some extent and oxidation ensues. Tablets made from the above formula have been exposed for three months to the trying atmosphere of the gen-

eral laboratory without any further change than a slight discoloration of the edges; some of the same batch were coated and have kept perfectly. If it is wished to obviate the labor of coating, which really is not necessary so far as their keeping properties are concerned, it should not be difficult to find some suitable coloring substance which might be incorporated before granulation. It is also necessary to examine carefully the dried ferrous sulphate, as many commercial samples do not comply with the official requirements.

The Nature of Color in Plants.

Little is known regarding the nature of color in plants, and for this reason the researches which are being carried on on this subject by Prof. Henry Kraemer possess an unusual degree of interest. He has extracted the color principles of 81 plants and has studied their behavior with various reagents and under varying conditions, and summarizes his conclusions (Proceedings American Philosophical Society, Vol. XLIII, No. 177) as follows:

"Colors in plants may be considered to be due to definite constituents which either themselves are colored or produce colors when acted upon by other substances. These substances are found in all parts of the plant, and apparently in all of the cells excepting certain meristematic or dividing cells. They may be divided into two well-differentiated classes, namely, (1) those which are associated with the plastids, or organized bodies in the cell, and (2) those which occur in the cell-sap, or liquid of the cell.

"The so-called white colors in plants do not properly belong to either class, but may be said to be appearances rather, due to the absence of color, and depending upon the reflection of light from transparent cells separated by relatively large intercellular spaces containing air. In other words, the effect produced by these cells may be likened to that produced by the globules in an emulsion. The white appearance is most pronounced in the pith cells of roots and stems, where on the death of the cells the size of the intercellular spaces is increased and the colorless bodies in the cells, as well as the walls, reflect the light like snow crystals.

"The green color of plants is due to a distinct pigment, chlorophyl, contained in a chloroplastid, and appears to be more or less constant in composition in all plants. The chloroplastid is, furthermore, characterized by usually containing starch.

"The yellow color substance in roots, flowers and fruits is due to a pigment, to which I have given the name chromophyl. This substance is contained in a chromoplastid which varies considerably in shape, and usually contains proteid substances in addition.

"In the inner protected leaf-buds there is a yellow principle which I have termed etiophyl and which is contained in an organized body which I have termed an etioplast. The etioplast does not appear to contain either starch or proteid substances.

"The blue, purple and red color substances in flowers are dissolved in the cell-sap and are distinguished for the most part from the plastid colors by being insoluble in ether, xylol, benzol, cholorform, carbon disulphide and similar solvents, but soluble in water or alcohol. While quite sensitive to reagents, yet none of these colors behave precisely alike.

"Cell-sap color substances corresponding to the cell-sap colors of flowers are also found in early or spring leaves and in autumn leaves."

Professor Kraemer is inclined to look upon the chromoplastids of both flowers and fruits as having the special function of manufacturing or storing nitrogenous food materials for the use of the developing embryo or developing seed, particularly as protein grains are usually contained in them. The same may be said of the chromoplasts in roots, as in carrot, where the proteids of the chromoplasts are utilized by the plant of the second year.

He also is inclined to consider the cell-sap colors, like other unorganized cell contents, as alkaloids, volatile oils, &c., to be incident to physiological activity and of secondary importance in the attraction of insects for the fertilization of the flower and dispersal of the seed.

Detection of Curcuma in Rhubarb.—J. Anselmier (*Schweiz. Wochenschr. f. Chem. u. Pharm.*, xlii., p. 119) gives the following simple method of detecting curcuma in powdered rhubarb: Moderately heat 0.1 Gm. of the powdered rhubarb with 20 drops of olive oil for one minute. One placing one drop of the mixture on a piece of white filtering paper, a characteristic yellow ring will denote the presence of curcuma. If curcuma is absent the ring will have a scarcely perceptible yellowish tint, which cannot, however, be mistaken for that of curcuma by any one who has performed tests on both curcuma and rhubarb.

The Volumetric Estimation of Phenol.—In a paper read at the last annual meeting of the Pennsylvania Pharmaceutical Association by Frank X. Moerk, the author stated that in the process as usually followed, in which an excess of Bromine V. S. is allowed to act upon the phenol in presence of hydrochloric or sulphuric acid, and titrating the excess of Bromine V. S. after the addition of potassium iodide with Sodium Thiosulphate V. S., with starch as indicator, the presence of the precipitated tribromphenol interfered somewhat with the end-reaction. Frequently in old phenol solutions the tribromphenol possesses a bluish color which is not removable by an excess of Sodium Thiosulphate V. S., and which makes the end-reaction difficult. To overcome the difficulties mentioned Mr. Moerk has recently been using a small quantity of chloroform, which is added after most of the brown color has been discharged by the addition of the Sodium Thiosulphate V. S.; the chloroform dissolves the tribromphenol and allows a very sharp end-reaction.

Starch Indicator.—Commenting on the proneness of starch solutions to deterioration, a circumstance which is the cause of much annoyance to those interested in analytical work, Frank X. Moerk, in a paper contributed to the last annual meeting of the Pennsylvania Pharmaceutical Association, says that something over a year ago he was led to try the use of oil of cassia as a preservative, influenced by a vague recollection of having seen some years ago a statement to the effect that oil of cassia had a remarkable preservative action upon carbohydrates. The experiment was a decided success, so that the solution, made up in quantities of 1 liter, could be used to the last drop. The starch solution is made up in the usual manner, and, after cooling, 2 Cc. oil of cassia per liter of solution added and dissolved by agitation. No objections have been noted to the use of this preservative in either qualitative or quantitative work, although Mr. Moerk has been asked on a few occasions: "Why our chlorine water smelled of cinnamon?" The querists were using chlorine water in presence of the starch solution to make tests for hydrobromic and hydriodic and the odor of chlorine the indication when sufficient of this reagent had been added.

A New Series of Hypnotics.—In the course of their investigations upon the relationships existing between chemical constitution and physiological action, G. Fuchs and E. Schultze (*Münch. Med. Woch.*, 1904, 1102; *Brit. and Col. Drug.*) have examined a number of ketones and their derivatives. Methyl, ethyl and propyl ketones exerted no hypnotic action upon dogs in doses up to 2 Gm., and the ketoximes, although effective in inducing sleep, had also a convulsive action, so that this group was discarded. Substitution derivatives of acetamide were then tested. Neither diethyl nor dipropylacetamide possesses the desired property, and when the nitrogen atom is alkylated a tetanic effect is generated; but if an atom of bromide be introduced into the methyl group of a dialkyl acetamide an efficacious and unobjectionable series of hypnotics result. These bodies have the general formula $BrR_2C.CO.NH_2$, examples being diethyl-, ethylpropyl- and dipropyl-bromacetamide, the first of which, the diethyl derivative, has been introduced into commerce by Kalle & Co. under the name neuronal, and, according to the authors, is the best of the three. It is a crystalline substance melting at 66-67 degrees C., soluble with difficulty in water, and acting effectively upon the human subject in doses of 0.5 up to 2 Gm. No unpleasant after-effects were observed.

Queries and Answers

We shall be glad, in this department, to respond to calls for information on all pharmaceutic matters.

Typewriter Ribbon Ink.—S. writes: "Can you furnish us with a formula for a purple that is of the same kind and quality as used by the concerns that manufacture typewriter ribbons? We do not want hectograph ink or anything like that, but the kind of ink that is used in inking the ribbons on typewriter machines."

The process of manufacturing typewriter ink is a somewhat complicated one, especially if a permanent or record ink is desired. Copying ribbons are less difficult to prepare, the pigment used being any aniline color of the desired tint, incorporated, after being dissolved in alcohol, with a mixture of water and glycerin, soap being used to give the ink the necessary body and counteract the hygroscopic tendency of the glycerin. A mixture of about three parts of water and one part of glycerin forms the vehicle and strong alcohol, six parts, the solvent. The desired aniline color will easily dissolve in the hot vehicle and soap will give consistency to the mixture.

For record ink any finely divided non-fading color may be used as the pigment; petrolatum is the best vehicle and wax is used to modify the consistency. The following notes on processes for typewriter ribbon ink are taken from a previous number:

Take petrolatum of high boiling point, melt it on a water bath or slow fire and incorporate by constant stirring as much lamp black or powdered drop black as it will take up without becoming granular. If the fat remains in excess, the print is liable to have a greasy outline; if the color is in excess, the print will not be clear. Remove the mixture from the fire, and while it is cooling mix equal parts of petrolatum, benzin and rectified oil of turpentine, in which dissolve the fatty ink, introduced in small portions, by constant agitation. The volatile solvents should be in such quantity that the fluid ink is of the consistence of fresh oil paint.

One secret of success lies in the proper application of the ink to the ribbon. Wind the ribbon on a piece of cardboard, spread on a table several layers of newspaper, then unwind the ribbon in such lengths as may be most convenient, and lay it flat on the paper. Apply the ink by agitation by means of a soft brush and rub it well into the instertices of the ribbon with a tooth brush. Hardly any ink should remain visible on the surface. For colored inks use Prussian blue, red lead, &c., and especially the aniline colors. Aniline dyes of the desired color, ½ ounce; alcohol, 15 ounces; concentrated glycerin, 15 ounces. Dissolve the aniline dye in the alcohol and add the glycerin. Ink as before.

Mist. Pulmon (Hoff).—E. C. W. wishes to know the correct formula of the preparation bearing this name.

Our correspondent's inquiry refers to the tuberculosis cure proposed at one time by Professor Hoff, of Vienna, the formula of which has been printed several times in these columns, and is as follows:

Arsenous acid	Gm. 0.1
Potassium carbonate	Gm. 0.2
Cinnamic acid	Gm. 0.3
Distilled water	Gm. 5.0

Dissolve in a flask with the aid of heat and add

Brandy	Gm. 2.5

and add

Extract of opium	Gm. 0.3

dissolved in

Distilled water	Gm. 2.5

After making a solution of the whole, filter. The directions are:

"At first take 6 drops after dinner and supper, gradually increasing to 22 drops."

An Optician's Periodical.—G. S. T. writes: "Kindly send me the title, name and publisher's address of some periodical which is published in the interest of the optician."

We get the information from a firm of manufacturing opticians that The Optical Journal, 1 Maiden lane, N. Y., is the leading periodical of its kind in this field.

Barbers' Bay Rum.—T. P. A.—There is no set formula for the manufacture of this article, which is usually nothing but a cheap and inferior grade of spirit flavored to resemble the original article. Many of the recipes in vogue call for a solution of oil of bay and acetic ether in alcohol, color being imparted to the solution by means of saffron. We have heard of manufacturers of barbers' supplies so unscrupulous as to turn out a solution of oil of cloves in wood alcohol and label the concoction bay rum, and do not believe this fraud is practised to any extent. A very fair quality of bay rum is afforded by the official formula in the United States Pharmacopœia under the title Spiritus Myrciæ, and the following also yields a satisfactory substitute for the imported article:

Oil of bay	drachms 4
Acetic ether	drachm 1
Alcohol	ounces 48
Powdered talcum	ounces 2
Water	ounces 80
American saffron	grains 30

Mix the oil, ether, alcohol and talcum, agitate thoroughly, add the water and saffron, agitate again, let stand for 24 hours and filter clear.

Information Wanted About "Sparklets."—A. J. E. writes: "There is an instantaneous, automatic soda apparatus for home use on the market called "Sparklet" siphon and bulbs. Will you kindly supply me with the following information regarding this article: Name and address of maker. Name and address of distributing agent, if any. Price of both siphon and bulbs. What are the aggregate sales each year? Is the demand by the consumer being created by the maker?"

We have not heard anything of "Sparklets" for several years past, and it is our understanding that their manufacture in the United States has been discontinued. Many wholesale druggists have been left with stock on their hands, the demand having fallen off, and a card of inquiry to any one of the leading wholesale drug houses in this city would doubtless bring you particulars regarding available stock and prices. We notice that a wholesale druggist in Montreal, Canada, is advertising "Sparklets" for sale in the Montreal Pharmaceutical Journal, but we surmise this refers to held-over stock.

Syrup of Calcium Lactophosphate.—L. S. R., Canada, writes: "Will you kindly send the formula with full directions for making syrup calcium lactophosphate of usual strength? I would inclose a stamp, but a Canadian one would be of no use to you."

What our correspondent needs is a copy of the United States Pharmacopœia. Syrup of calcium lactophosphate is official in that book, the formula and directions being as follows:

Precipitated calcium carbonate	Gm. 25
Lactic Acid	Cc. 60
Phosphoric acid	Cc. 36
Orange flower water	Cc. 25
Sugar	Gm. 700
Water, sufficient to make	Cc. 1000

To the lactic acid mixed with one hundred (100) Cc. of water, and contained in a capacious mortar, gradually add the calcium carbonate in portions, until it is dissolved. Then add the phosphoric acid and triturate until the precipitate at first formed is dissolved. Add one hundred and fifty (150) Cc. of water and filter, rinsing the mortar with seventy-five (75) Cc. of water and passing the rinsings through the filter. To the mixed filtrates add the orange flower water, and having added the sugar dissolve it by agitation, without heat, and strain. Lastly, pass enough water through the strainer to make the product measure one thousand (1000) Cc., and mix thoroughly.

There Is No School for Optical Training in New York.—W. F. E. W. says: "Would you kindly let me know if there is a school for optical training in this city (New York), a school where the fitting of eyeglasses and eye-testing are taught?"

We have made inquiries among the leading opticians anu are informed that there is no school of the kind described in New York. A few tutors give private lessons in optics and optometry, but, as stated, there is no institution in which this work is systematically taught.

By W. A. DAWSON

Under this head will appear suggestions and plans for increasing trade, advertising experiences, information, and notes of interest useful to the pharmacist in the preparation of his advertising matter. Specimens of current advertising will be reproduced, with suggestive analysis and criticism, and queries relative to advertising matters will be answered. To avoid delay address communications to the Department of Business Building, AMERICAN DRUGGIST, 66 West Broadway, N.Y.

THE BUSINESS PROBLEM OF THE SMALL STORE IN A SMALL TOWN.

"L. P.," a subscriber in a Pennsylvania town, writes: "Having followed with interest the comments and practical hints that Business Building is giving to retail druggists, I shall be glad to receive some suggestions from you in dealing with the following conditions: This town is composed of about 1,500 inhabitants. The general stores have all been selling patents and such bottled articles as castor oil, paregoric, &c.; the amount that they sell alone would be a 'handsome thing' for us. We are the only druggists here. The general stores are not disposed to drop the drug lines. We have no local newspaper. This is a full-price town, and it would not be policy to cut.

"I have thought of issuing coupons with 'patents,' and when the purchaser holds, say, $10 in coupons, give a premium of some sort. Do you think this plan all right, or what better plan could I pursue?"

Before proceeding to discuss this problem we would say to the pharmacist in the big cities, "Read and ponder." Observe how universal is the eternal problem, for the city pharmacy can claim no proprietary right of department store opposition, nor can the city pharmacist think that he is the only sufferer from the pernicious activity of the big store in seeking after trade that he believes to be rightfully his.

The problem of department, or general, store competition differs in degree only, not in kind, with the pharmacist in the big city and the pharmacist in the little country town. It bears harder on the little fellow, if anything, for the factor of distance is reduced to a negligable quantity in the small town, the drug store and the big store being often situated on the same block.

It is no easy matter to win this drug and sundry trade away from the general store or stores in a country town. But that it can be done I know from personal experience. It is tedious work at first, for the inertia of habit is hard to overcome, and the average man is liable to become discouraged and give it up—a thing that usually happens at a time when a little more work would have "turned the corner."

It is the order and delivery system of the "grocery and provision" section of the general store in the small town that is the chief obstacle to be overcome in getting this trade, and by the same token it is this order and delivery system that enabled the general storekeeper to take trade away from the druggist, and that even now enables him to encroach more and more, gradually but steadily, upon the druggist's sundry and fancy goods trade.

The druggist doing business in a town of 5,000 or less should watch the general stores, especially the larger establishments, just as closely as he does his competitors in the drug line—a "leetle" closer, in fact.

The delivery wagons of the general dealer cover its home town and the surrounding country systematically and completely, calling daily at houses in the village, two or three times a week at those in the surrounding five or ten miles of territory, once or twice a week at farms ten to twenty miles out, taking orders for the next trip, delivering goods ordered on their last visit.

Even the housewife living in the village, perhaps but a block or two away from the drug store finds it "*so* easy" to include with her provision order two or three small items that she formerly or usually bought at the drug store; consequently, the druggist some day realizes that his trade has greatly fallen off in such lines as toilet soaps, perfumes, vaseline preparations, hair, tooth and nail brushes, whisk brooms, talcum powder, fly paper, spices, herbs, borax, and other chemicals used in the household for cooking or cleaning. It seems almost unnecessary to say that a stock of the old-time "patents" that have become standard articles in that community and the leading (best advertised) cure-alls of the day, are kept on hand, as well as a stock of the simples of household materia medica.

Here, then, is a situation where the use of a premium is both logical and legitimate. The housewife buys these goods of the grocer because it is easier than to go to the drug store for them. It saves exertion, time, trouble, perhaps cash; if it goes on the book with the other things it will be paid by the head of the house at the end of the week or month, and she is just that much ahead in ready money.

In giving premiums, figure out what you can afford to give, and then look around for the biggest value for that price. Usually, the cost of the premium will be from 5 to 10 per cent. of the retail price of the goods that it is given with.

Don't make the mistake of going into trading stamps; when you give a premium give it all to the customer, not one-fourth of it to the customer and three-fourths to some unknown Chicago or New York millionaire.

From the experiences of a premium campaign that I recently went through, undertaken as a measure of self-defense when a trading-stamp company started in to "bring us around," partly as a matter of business (we did a larger business than our three competitors combined) and partly from revengeful motives (because we turned their proposition down hard and frankly stated our opinion of trading stamp companies to their representative), I have come to regard as proven facts these things:

A little present in the hand counts for more than a grand piano in some far off city, even though that piano costs you nothing, when you have collected some few hundred thousand trading stamps.

The best premiums, and the best advertisement, are such pretty and decorative things as may be used in decorating the home, and that can be used for no other purpose: among such articles pictures, unframed, and fancy china stand pre-eminent.

Never give as a premium any article that is consumed or put to practical use; the consumed article is soon forgotten, a picture or piece of china, barring accidents, will be a standing advertisement as long as you are in business.

In beginning a premium campaign it is a good plan to give a premium with a 25, 50 and 75 cent sale, as well as with all sales amounting to any number of even dollars; after the first week, or until premiums are used up, give premiums only with sales of one or more even dollars. Customers will buy enough more to make up an even sum when their purchases fall 50 cents or less short of an even number of dollars, thus increasing the volume of sales.

Customers should have the choice of premium or coupon, premiums being offered for $5, and multiples of that sum up to $25; cash sales as represented by coupons, or of, say, $1 in cash or $1.25 in trade, with choice of any goods in store, for coupons representing $25 in cash sales.

When it is desired to push any particular line of goods, give premiums only with such goods, or give better values than are given with other goods.

In the case of our correspondent we would recommend the giving of premiums on all goods for one or two weeks, but, if possible—the man on the ground is best able to judge that—

the premium offer should be limited to ladies only, with the object of getting them to visit the store in person, not once, but several times, and so "get the habit." After the first week or two (again, if possible) limit the premium offer to the goods that are carried by the general stores, or whatever lines one wishes to increase trade in.

As for articles suitable for premiums, I have found Butler Brothers to be headquarters for everything except pictures—they carry only a limited line of these—and I have found the largest, cheapest and most suitable line at the establishment of the big "Racket" jobbing house of Charles Broadway Rouss, New York.

Fancy china and glassware articles at from 30 cents a dozen and upward can be satisfactorily bought from Butler's catalogue—although by frequent visits to their warerooms one often picks up some special "jobs" that are rare bargains.

To buy pictures right requires personal selection, the exercise of some little artistic taste and a sharp lookout for bargains. I have bought fair etchings for a cent, signed proofs for five cents, good photogravures of the world's great paintings, the prints mounted up in heavy mats covered with gray cartridge paper and measuring about 16 x 20 inches over all, for the nominal price of three cents; similar pictures, measuring 24 x 30 inches, at 12 cents, &c.

The finest window display that I ever spent weeks of work upon never drew half the attention that a window full of these premium pictures did.

Where it is impossible to personally select pictures, specify the class of subjects wanted; the best are landscapes, animals and copies of famous art works.

Never, never, under any circumstances put a cash price on a premium. Never sell a premium, even if offered ten, twenty, a hundred times its value. The moment you make it an article of merchandise its value as a premium is gone. Should some one whom it would not be policy to refuse insist that you sell them a premium article, GIVE IT, but *don't sell it.* Let no one but yourself see a bill for premium goods, and caution clerks against mentioning probable cost or value of premiums to customers. "A beautiful photogravure reproduction of a celebrated painting, mounted and fitted up in a heavy gray cartride paper mat all ready for hanging up, given with each cash purchase amounting to $1.00 or more," is quite a different proposition from: "One of these pictures given with every cash sale of a dollar's worth of goods. Pictures for sale at 10 cents each."

We give the wording of some of the card-signs for store and show windows that have proved effective:

These Pictures are NOT FOR SALE.
We Give Away FREE To Every Customer
Who purchases FOR CASH $1.00 worth of goods.

NO AMOUNT OF MONEY WILL BUY ONE OF THESE ARTICLES.
We Bought Them to Give Away to CASH CUSTOMERS
who purchase at one time goods amounting to $1.00.

"THE ONLY WAY" FOR YOU
to secure one of these beautiful premiums
is by making a CASH PURCHASE of $1.00 or more.

LOOK OVER YOUR MEDICINE CLOSET.
You'll have no trouble making up a list of things
needed that will enable you to secure one of these
CASH TRADE PREMIUMS.

The Road to Ruin.

There is one sure, quick, easy road to commercial ruin, and every year sees thousands of retailers traveling that road. That is to let stickers stick.

No buyer is so shrewd but that his stock will gather some slow selling goods, but it's his own fault if they stay there.

Every one of the much talked about big city stores has an iron clad rule which no buyer dare evade. Seasonable goods must not be carried over, and no stuff dare be kept on hand beyond a certain time.

Watch the advertising of these houses. See how they knife the slow sellers. They don't call 'em stickers, of course, but you who have been there yourself can read between the lines. If laggard goods will not sell at one price the knife goes in again, and if need be yet again, until the desired result is wrought.—Butler Brothers' "Drummer."

Clipped From Current Advertising.

"Preserving Time"

The season for "putting up" preserves is here and the good housewife is busy preparing the various preserved fruits for use during the coming cold months. One of the most important things used in preserves are the spices. Unless these be of the best quality the preserves will lack the richness of color that is only to be obtained from the finest spices. Nothing in the world is so adulterated as the ordinary commercial grades of spices. The spice millers employ expert mixers whose sole duty is to discover how to cheapen their product, and shipload after shipload of cccoanut shells are imported to this country for no other purpose than to adulterate spices with. The cheaper grade of black pepper, for instance, contains not a grain of that spice, but is a mixture of cocoa shell, charcoal and white earth, with a little red pepper in it to give the peppery taste. We select our spices with the greatest care and keep the best to be found in the market. We also sell Squibb's Ground Spices. These are superlatively fine. The best obtainable the world over. These spices are not only pure, but each kind is obtained from the particular spot where it grows to the greatest perfection of flavor. Squibb's Spices are put up in one-fourth, one-half and one pound cans, the prices being but little more than for the ordinary grades. Pure Paraffin Wax, for sealing jellies and preserves, 20c. pound.

Our Scalp Tonic and Dandruff Cure

Our latest specialty. It is an antiseptic and tonic treatment for all unhealthy conditions of the hair and scalp. We have been experimenting for a long time to secure an ideal hair preparation and think that we have it in this. It is at least superior to any similar preparation now on the market. It contains no grease, lead salts or other dyes, and is a cleanly, pleasant lotion with a refreshing odor. It will cure and prevent dandruff and stop the hair from falling out, and bring back the vigor and lustre of health to the hair. 50c., 6 oz. bottles; $1.00 16 oz. bottles.

Disinfection

The proper disinfection of house, cellar, stable and yard is an important sanitary measure during the hot and humid weather peculiar to this season. "Chloridio," 25c., or "Platt's Chlorides," for use inside the house; or, a "Perfection" Formaldehyde Fumigator, 25c., burned in a room or closet will absolutely destroy all odors and every disease germ in it. "Soluble Phenyle" is a good disinfectant to use in a cellar, kennel or stable, 22c., 75c., and $1.25, the latter a gallon can. Six pounds of copperas, 25c., dissolved in a pail of water and thrown in the cesspool or out door sink, is a cheap but effective disinfectant for that purpose. Special attention should be paid to garbage heaps or other putrescent or fermenting matter that attracts flies and other insects. Recent investigation has pretty conclusively proven that the insects feeding upon such matters carry germs of disease to food and to human beings; therefore all waste matter should be promptly treated with crude carbolic acid, 25c. pint, or chloride of lime, 10c. pound, not only for disinfection, but to keep insects away from it as well. We will be pleased to give full information as to the proper manner of disinfecting in any particular case or give estimates upon amount and cost of the necessary articles.

New Goods at Lush's

A new Violet Talcum Powder, put up in handsome glass jars with sift tops. Jars are large, holding two or three times the amount that the ordinary talcum box contains. Powder is of good quality and well perfumed. Big Value at the price—15 cents. A new lot of 5 Cent Hand Scrubs has just come in—good size and durable quality—also an improved shape of Hand Scrub; has a high back that forms a handle, making it more convenient than the old shape. Price, 3 cents each. Another lot of Ayrad's "Water Wings," 25c., has arrived. Any one can learn to swim with them; they support 50 lbs. in the water when they are wet and inflated. A New Truss—The "Smithsonian." The most scientifically constructed truss yet invented. Built on new lines and entirely different in shape from any other. Sold under a guarantee—money back after 30 days' trial if it fails to hold. Single, $3.50; Double, $.00. We keep other styles, also—private room for fitting. A new stock of Stationery, including good values @ 10 and 15 cents.

"Special"

A $1.50 Fountain Syringe for 98c.

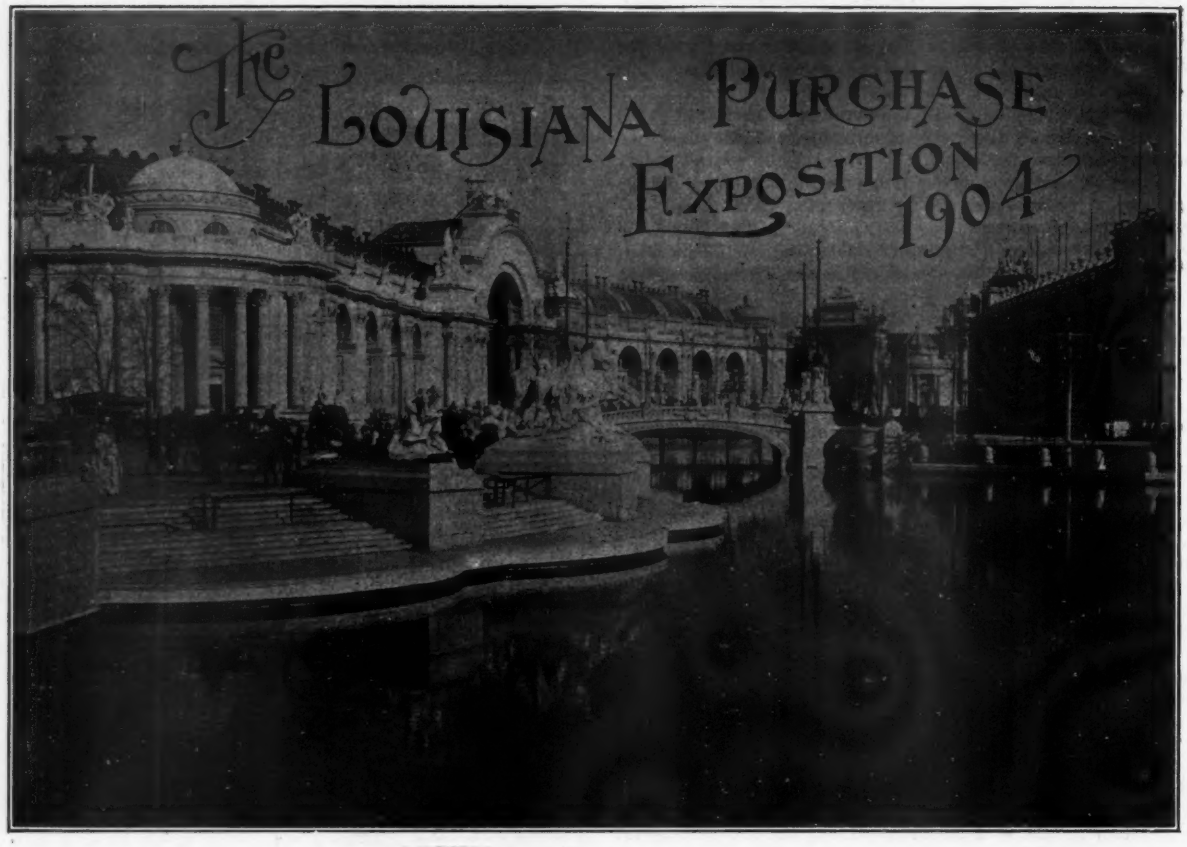
A high grade Syringe, 3 quart oval bag, rapid flow tubing, white rubber with slate trimming. Just a dozen of these, that we picked up at a bargain price. We have no less than 14 styles of 2 quart syringes in stock—a larger variety than is usually stocked, even by wholesalers. One of the newest is the "Orient" Balloon Spray @ $1.50. The stock is a new compound, "Pink Rubber," half way between white and maroon rubber in color—and is extremely soft, highly elastic and very durable. One of the best fountain syringes we have seen. Other styles @ $1.00, $1.25, $1.50, $1.75 and $2.00. Bulb Syringes, from 40c. up; an excellent one at 75c.; or, the best, $1.00. Hard Rubber, Glass, Soft Rubber and Pewter Syringes for every use.

Effervescent Salts

Are much used during hot weather. They are cooling and laxative, keeping the stomach in good order and the blood cool. Kissingen and Vichy.—A teaspoonful of either salt in a glass of water exactly reproduces the fresh water from the springs. They are much used, together, for the treatment of obesity. Citrate Magnesia salts makes this well known and pleasant laxative. Phosphate Soda Salt is a laxative acting especially upon the liver. All kinds, 45c. per bottle. A full line of all the proprietary Effervescent Salts.

A Drug Store that Is a Drug Store

There are lots of drug stores. You may wonder whether it makes any difference where you take your prescriptions or where you buy your goods. Our best promise is our drug stores themselves. Come in and investigate them from front to back, from top to bottom. Bring in anybody else who is competent to judge and let them investigate methods, quality of drugs, prices and everything else. If you do you are bound to become one of our customers, because you will find that this is a real drug store, worthy the name.



The Palace of Manufactures, Looking Toward the East.

The Approach to the Grounds.

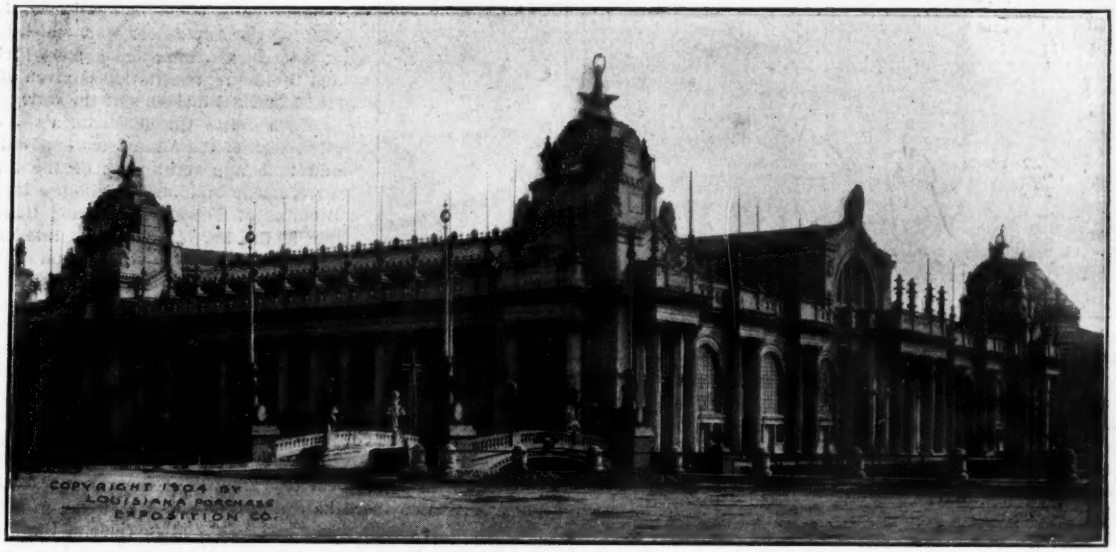
The Louisiana Purchase Exposition is planned and executed on a scale so vast as to require a total readjustment of the ideas and concepts of the visitors to insure a full realization of its interest, its beauty and its value. For this reason, the mere superficial sightseer devoting four or five days to the Exposition without adequate preliminary study of its plan and the principal features of the Exposition, is apt to come away with a sense of disappointment. The main entrance to the grounds at Lindell avenue is lacking in dignity and in architectural unity. On debarking from the street cars the visitor finds himself amid Italian fruit stands, hot sausage and cold watermelon vendors and "barkers," whose raucous cries and unappetizing wares grate upon the sensibilities. After a walk of two blocks or more, past bootblack stands, fruit stalls, &c., the gateways are reached, and when past these there still comes a further tramp of 500 yards before one reaches a point where the main buildings come into view. Even then, owing to the breadth of the open spaces and the great area of the buildings, the impression is not striking to a public familiar with skyscrapers. These unfavorable features are all the more regrettable because they could have so easily been avoided. By bringing the various trolley lines, &c., close up to the gates, placing the gates closer to the main buildings and erecting an impressive series of arches across the entrance to the Plaza St. Louis to serve as a fitting portal, the convenience of the public would have been served without additional cost, and the first picture presented to the visitor would have been one of splendor instead of squalor; of beauty, instead of ugliness, and the real grandeur and beauty of the architectural feature would have been given due effect. This first disagreeable impression made by the mean and architecturally inadequate approaches gradually wears off as the visitor becomes familiar with the really magnificent vistas furnished by the broad and masterly treatment of the main features of the Exposition; but there is still left the impression that the Exposition is spread out over too great an area, one so vast as to effectually bar any attempt toward the formation of a general all-embracing picture such as constituted the greatest charm of the Columbian Exposition at Chicago, with which this Exposition will inevitably be contrasted. The architects there presented to the visitor arriving from the lake a picture which charmed from the first glimpse as one neared the shores, while the Court of Honor as a central feature was more compact and more readily grasped as a whole than is the picture presented by the Festival Hall, with its flanking colonnades of States and cascades which make up the principal picture of the St. Louis Exposition. On the other hand, the lavish use of water in the cascades and fountains and electricity in the illuminations of the present Exposition have produced effects which were not possible at the older exposition, though they were suggested on a smaller scale in the beautiful illuminated tower and fountain of the Pan-American Exposition at Buffalo.

Were the grounds and buildings intended wholly for commemorative purposes the criticism of diffuseness would carry but little weight; but when it is recalled that it is intended that the visitors should traverse these wide spaces seeking knowledge it will be seen that it would have been better to have had less of the influence of the landscape artist and more of that of the engineer and architect in the planning of the Exposition.

The human body is a fairly well-known factor and its capacities should not have been disregarded. If this breadth was deemed essential, then adequate means for locomotion should have been provided. The intramural railway is not enough, the roller chairs and jinrickshaws are too expensive. There should be small, open, roofless cars running through all the main avenues, and charging at most a fare of five cents for a ride of any length, and with a comprehensive transfer system. Such a line could readily have been provided for in the original plans and would have proven profitable both in money and in increased appreciation by visitors of the truly wonderful aggregations of exhibits shown at this greatest of all expositions.

For notwithstanding the faults named above and notwithstanding a deplorable paucity of exhibits from our own manufacturing pharmacists and chemists the fact remains that the St. Louis Purchase Exposition has brought together a wonderful collection of exhibits from the remotest corners of the earth, a study of which will prove of value and of interest to every intelligent visitor.

Within the limitations of space imposed it will be impossible to attempt any detailed description of the exhibits, and we shall therefore merely indicate to the pharmacist the location of the exhibits which have special pharmaceutical interest and suggest to the pharmaceutical visitor the best way to utilize his time.



The Palace of Electricity, in Which the Collective Chemical Exhibit of Germany is Located.

HOW TO REACH THE EXPOSITION.

Special rates of fare to St. Louis have been made by all the railroads and it seems probable that even further reductions will be made, so as to enable all to visit the Exposition at a relatively small expenditure for railway fare.

The whole of St. Louis seems to have been turned into a caravansary, and so there need be no trouble in finding accommodations to suit any purse. The larger hotels have made no changes in the prices for accommodations. Rooms may be had in private houses at a dollar a day and upward, including breakfast. Numerous cheap structures of a temporary character have been erected near the Exposition grounds, where accommodations of a kind may be had at very reasonable rates—or rates which seem reasonable to a New Yorker. At least one of these hotels near the grounds, the Epworth Hotel, is a permanent brick structure, and has been selected as the headquarters for the meeting of the National Association of Retail Druggists in October.

THE CHARGES OF EXTORTION.

There has been much complaint in the newspapers regarding the exorbitant prices of the restaurants; but our own observation hardly confirms these charges. As a matter of fact the better class of restaurants have about the same scale of prices as do the New York city restaurants, though it is true that in the cheaper restaurants the scale of prices is above that usually prevailing in restaurants of the same class.

The Deutsche Wein Restaurant, which is located near the German Government building, and, indeed, is said to have been subsidized by the German Government, serves a table d'hote dinner at $3 per plate which leaves nothing to be desired, either as to appointments or service. At the Intramural Railway stations operated by Fred Idler & Co.—they do not operate all of them—an excellent and filling hot frankfurter sausage and cup of good coffee with cream may be had for 20 cents. In the Moroccan concession you may dine al fresco under the cedars at 35 cents without or 50 cents with wine, getting a typical Tenderloin table d'hote, with M. Hama, erstwhile of Sherry's, as host, and, if you wish, a really delicious cup of Turkish coffee, poured out of the little hand wrought copper boilers which abound in our own Syrian quarter. In the Tyrolean Alps you may make a substantial meal on two imported frankfurters with potato salad and a stein of beer for 60 cents or you may adopt this suggestion, naively conveyed on the bill of fare in the form of a specimen check, and order a very decent dinner for two, with all the frills, at a total cost of $11. On the Pike you may sit in the balcony of Idler's New York Restaurant—operated, by the way, by Fred Idler, formerly superintendent of the New York Drug Club—and enjoy a view of the interesting crowd which throngs the street and a good 50-cent dinner, which, though simple, is well cooked and neatly served. In fact, there is a great abundance of restaurants of all kinds and meals at all prices. It costs more to live at restaurants that it does at home. This fact is really the basis of most of the complaints.

We shall endeavor to point out the major portion, at least, of the exhibits likely to be of special pharmaceutical interest. With such an overwhelming mass of matter to choose from, and with the comparatively limited time and space left at our disposal, it will undoubtedly follow that some things have been omitted that should have been mentioned; but we feel confident that the pharmacist who will follow the suggestions outlined below will find that he can accomplish more, so far as pharmaceutical sight-seeing is concerned, than he could have done had he undertaken the task without such special guidance.

No effort will be made to arbitrarily determine how much time the pharmacist should devote to any particular section, but in a general way the following plan will probably be found to

Corner of Palace of Liberal Arts Where Most of the Pharmaceutical Exhibits Are Located.

be as economical of time and effort as any that can be devised, though the question of its suitability to the particular observer depends so much upon the taste of the individual and the amount of time he has at his disposal that even this suggestion is offered with some diffidence.

The regulation programme for the evening is a visit to as many of the attractions of the Pike as the limitations of physical endurance and purse permit. If, however, the sightseer has put in a full day along the lines indicated, he will find that a visit to one attraction, such as Fair Japan or Hagenbeck's, is quite as much sightseeing for one evening as he has capacity to enjoy or even endure.

The Daily Programme.

Following is a tentative suggestion which, if followed, will insure the pharmacist covering the more interesting pharmaceutical features during a week's stay at the grounds, and will also leave him sufficient time to at least get a good idea of the general features of the Exposition.

First Day.—Palaces of Liberal Arts and mines and Metallurgy, taking an automobile ride around the grounds at the closing of the buildings.

Second Day.—U. S. Government Building, U. S. Fishery Building, the out-of-door bird exhibit, and then one of the Fine Arts buildings or some of the various State buildings, concluding with a ride by the Intramural Railway to Station 1 or to Station 3, as the fancy may dictate, and an evening on the Pike.

Third Day.—Palaces of Manufactures and of Education, and the De Forest Wireless Tower, which gives an admirable view of the grounds. This ascent should be made, however, only when it happens to be clear weather. The evening can be devoted to a visit to the Fine Arts Buildings, which are open on certain evenings, and might well include a ride around the Lagoon and Grand Basin in an electric launch. This tour should be taken after nightfall, and at an hour when the cascades and fountain are in operation, as they do not play continuously.

Fourth Day.—The Palaces of Varied Industry and Electricity, and possibly the Palace of Transportation and Machinery might be given at least a cursory examination. A delightful *al fresco* dining place, if this programme is carried out, will be found to the southwest of the Machinery Hall and immediately south of the Japanese Imperial Gardens, in the out-of-door restaurant of the Moorish Concession. This concession, by the way, is under the general management of A. W. Shibley, a graduate of the class of 1903 of the New York College of Pharmacy, who will extend a cordial welcome to all pharmacists making themselves known to him. After dining here on the crest of the hill, the evening can with advantage be devoted to viewing the Anglo-Boer war, which begins at 8.30 o'clock, in which a most thrilling and lifelike representation is given of several historical incidents of the war.

Fifth Day.—Queen Victoria's Jubilee gifts, back of the Administration Building, and take a general view of the foreign Government buildings, a glimpse into the Building of Forestry, Fish and Game; a trip in the Ferris Wheel and into one or two of the Philippine villages and the Philippine Forestry Building, concluding with the general review of the outdoor exhibit of the U. S. Bureau of Plant Industry and the outdoor anthropological exhibit of the United States, including the Indian school. If any time be left the visitor will find ample attractions in the Horticultural Building.

Sixth Day.—The Palace of Agriculture will furnish sights enough to keep the visitor busy for the entire day, or if he is content with a mere cursory glimpse of the many features of interest shown there he can devote this day to the Fine Arts, devoting the evening, as usual, to the attractions of the Pike.

There is much more to be seen than is indicated in the outline programme laid out above, but our own experience and observation lead us to believe that, by having some such general plan and adapting it to one's special taste or inclination, much more can be accomplished than by a wholly aimless wandering to and fro, which will entail a great deal of unnecessary duplication of travel, and this, in view of the great amount of ground covered, must be guarded against if one hopes to obtain the best possible results within the time that is at his disposal.

There are many objects of general interest which are not named at all in this article, but which are so much talked of and so prominent that no visitor will fail to see such of them as appeal to his own taste. This article has been necessarily restricted closely to pharmaceutical topics.

How to See the Exposition.

If a brief visit is contemplated, and the majority of pharmacists will only have time for a brief visit, it is needless to undertake a general preliminary survey of the ground, however satisfactory this might be from a purely esthetic point of view, for this survey would require an entire day and would entail a practical duplication of the work of the visitor.

THE CENTER OF PHARMACEUTICAL INTEREST.

The Palace of the Liberal Arts contains more of especial interest to pharmacists than any other single building, and the visitor should therefore first take a survey of the contents of

this building. By reference to the accompanying map of the grounds it will be seen that the Palace of Liberal Arts lies at the extreme east of the grounds. The principal, or Lindell, boulevard entrance opens on the plaza of St. Louis, and the first of the main buildings reached is the Palace of Manufactures. Entering this palace at the northwestern corner—and, by the way, every visitor will find the task of sight seeing much facilitated by frequent reference to a pocket compass and a map—the sightseer will find himself in the midst of a handsome display of Parisian gowns, etc.

The Crystal Pavilion of the Mississippi Glass Company, Block 27, D street, Palace of Manufactures, possesses special interest for pharmacists, as it is here that the Appert glass is shown. The display includes large tanks for chemical reagents, etc., coolers for domestic purposes, and what will specially interest the pharmacists, a lime water dispenser, which is so designed as to enable the pharmacist to dispense lime water of a uniform strength with the least possible trouble.

Passing in a leisurely way through the Palace of Manufactures, the Plaza of Orleans, and entering the Palace of Liberal Arts at the northwest corner, nothing of especial pharmaceutical interest will be found along the northeast aisle until the easternmost corner of the building is reached, where, opposite Block 6, the druggist will see a large collection of Chinese drugs arranged in glass jars alongside the southeastern wall. Unfortunately many of these drugs bear only the Chinese title, as many of them have never been given systematic scientific names. Among the drugs shown, which are noteworthy on account of their great dissimilarity to our own materia medica, are dried lizards, dried frogs, scorpions, centipedes, beetles, tree frogs, chicken blood pills, dragons' bones, dragons' teeth, etc. Other drugs shown, which are more or less familiar to us, are ginger, orange peel, borage root, bark, galls, indigo, angelica, realgar, veratrum nigrum, iron pyrites, convolulus, cardamoms, berberis and urtica tuberosa.

Pharmacists desiring further information regarding this drug exhibit should inquire of the attendants, for J. A. Berthet, an attache to the Chinese commission, who has special charge of this feature of the exhibit, which comprises some six hundred specimens of crude Chinese drugs, some of which are to Western eyes very crude indeed.

Turning west along the southern wall the pharmacist will observe some interesting views of prominent watering places in the German section, which joins the Chinese section. Reaching the extreme southwestern corner of this building he will find on the right the handsome pavilion of the Roessler & Hasslacher Chemical Company, in Block 65.

This pavilion contains an excellent representation of a laboratory of an alchemist of the Middle Ages, showing all the chemical paraphernalia in use by these searches after the philosophers' stone. This laboratory is a reproduction of the famous painting by Teniers of "The Old Alchemist." The exhibit of the productions of the Roessler & Hasslacher Chemical Company, which forms the foreground of the picture, includes cyanides, acetone and solvents, chloroform, ceramic colors (enamel and underglaze) and metallic oxides for decorating china and glassware, sodium peroxide, sodium dioxide (dental), metallic sodium (sticks) and Dr. Schaefer's lithium salts, carbonate, benzoate, citrate, salicylate, etc., and cocaine, caffeine, coumarine and pilocarpine.

Further south on this aisle at the intersection of the aisle leading to the southwestern entrance the Luyties Homeopathic Company share a handsomely fitted booth with Sanitol. In the extreme corner is a display of Allen's perfumes, the display including a complete plant for the manufacture of perfumes from the pomades. The churns for washing the pomades, the refrigerating tanks, the aging racks in which carboys of finished extracts are turned over and over for months at a time are all shown. A group of wax models is also shown, which embraces every flower used in perfumery.

Passing westward along the southern aisle (6) we find in Blocks 56 and 66 on aisles G and H, which lead north from aisle 6, a number of displays of surgical instruments and appliances, operating chairs and physicians' furniture.

(Written for the American Druggist.)

THE PHARMACEUTICAL DISPLAY IN THE LIBERAL ARTS BUILDING.

By James M. Good, Ph. G.,

St. Louis, Mo.

In the matter of chemical industry Great Britain lays claim to having been "a pioneer among nations." An impartial critic will admit that she has well maintained her original position, but in the field or organic chemistry and the manufacture of synthetic products she must acknowledge, with a degree of humiliation, that Germany has outstripped her. In this connection it is an interesting fact to note that in the search for artificial synthetic quinine W. H. Perkin, an Englishman, hit upon the reaction which produced the first aniline color possessing the properties of a dye, and for a few years the production of the coal-tar colors, as an industry, was carried on in Great Britain.

Exhibits of "coal-tar products" are made by several firms. They include benzole, pyridine, picric acid, toluol, creosote, and various manufactured colors used as dyes.

In the Palace of Liberal Arts, Section 55, exhibits interesting and instructive are made by upward of a hundred different British firms or individuals under the classification of the Chemical and Pharmaceutical Arts.

The different exhibits in this group cannot be described in detail to advantage. They must be seen to be apperciated. Certain industries may be grouped, however.

Five different firms are represented in the alkali industry. They show ammonia and soda products, metallic sodium, silicates, bleaching powder, acetic acid, etc.

Contributions to the acid industry, nitric, hydrochloric and sulphuric, are made by five other companies.

Alum and allied compounds are shown by two firms.

The sulphur industry is an important one. Besides its more familiar forms, sulphur is shown as chloride, sulphite, hyposulphite, etc.

Explosives are shown by Nobel's Explosives Company and Pain & Sons. The displays include smokeless high explosives, cartridges, shells, etc.

Oils, fats, waxes, soap and candles are exhibited by a number of firms, including in the different groups many interesting items. Of the different firms represented probably the Price's Patent Candle Company is best known to American pharmacists because of its pure glycerin. As shown by its exhibit the manufacture of soaps is hardly to be considered a minor industry. It shows pure stearin in the form of very pretty statuettes, which might easily, at a little distance, be mistaken for Parian marble.

Ethereal oils are shown by Allen & Sons, Morson & Son, and others. The climate of England is not congenial to the growth of a great variety of plants for the production of natural essential oils, but the manufacture of synthetic perfumes is a branch of industry which is open to her. It may be considered an "infant industry" as yet.

Stafford Allen & Sons have a very handsome showcase in which they display Allen's expressed oils, as follows: *Ol. amygdalæ*, oil of almonds, *ol. amygdalæ pallid.*, oil of almonds bleached, *ol. amygdalæ persic.*, either oil of peach or apricot kernels, *ol. crotonis ex croton tiglium.*, *ol. staphisagriæ ex delphinium staphisagriæ.*

Allen's essential oils, including the oils of bitter almond, free from prussic acid, buchu, caraway, cardamoms, blue English chamomile, Ceylon cinnamon, cloves, copaiba, coriander, cubebs, cumin, English dill, juniper berries, English lavender, nutmeg, orris root concrete, both Florentine and Mogador varieties, also the tenfold "Concentrated Essential Oil" pepper, English peppermint, English pennyroyal, Pimento, English rosemary, sandal wood, East Indian (which was first distilled in England about 60 years ago by this firm), English savine, and eugenol.

One of the specialties of this firm, which was has done much to make the name known in the United States, is their cultivated

leaves. Their display of these drugs is particularly interesting, including as it does: Aconite leaf and root, belladonna leaf and root, foxglove leaf, henbane [first and second year—biennial], roots of dandelion, English rhubarb, and valerian, English dill fruit, herbs and flowers of chamomile, lavender, pennyroyal, peppermint, rosemary and savine.

Photographic views of the growing herbs are shown in connection with the herbs and roots themselves. In addition to the above display, the firm also shows Allen's green extracts of belladonna, henbane, etc.; the aqueous extracts of opium, gentian; the alcoholic extracts of belladonna leaf and root, nux vomica, Indian hemp, etc.

Other pharmaceutical preparations shown are the resins of podophyllum, jalap and scammony roots, aloin, English

Some old chemical glassware of historical interest is shown by the London Society of Apothecaries.

Pharmaceutical as well as chemical preparations are well represented in the exhibits by Evans Sons, Lescher & Webb, Howard & Sons, May & Baker, Morson & Son and William Martindale. In the collection by the latter several specialties of his may be seen, such as castor oil solutions of alkaloidal bases for ophthalmic use, glycogelatin bougies, and capsules of different ethers, which are of considerable pharmaceutical interest.

In studying the displays of chemicals and pharmaceuticals one is not likely to be elbowed out of position. There is room to wander. There are always crowds near the tables in the Agricultural Building when buttermilk is being dispensed and baked biscuits distributed, but the acquirement of knowledge

Brazilian Display in the Palace of Liberal Arts, Showing Complete Contents of a Brazilian Pharmacy.

elaterium, powdered rhubarb, mercury with chalk, mercury ointment and pill, and ground pepper, typical grades only shown.

Among other interesting exhibits may be mentioned Allen & Hanburys infant foods and malted preparations.

Battley & Watts exhibit pharmaceutical liquors (corresponding to our fluid extracts). Liquid Opii Sedativis is one of their most widely known preparations.

Drugs and pharmaceutical preparations, such as elixirs, emulsions, syrups, extracts and pellets, are exhibited by Corbyn, Stacey & Co., of London. This firm also shows some antiquities in the form of ointment and syrup jars.

An interesting collection of antique mortars used in the sixteenth and seventeenth centuries is shown by Daniel Davison, of Cromer, whose description of this exhibit was published in the AMERICAN DRUGGIST some months ago.

pure and simple, without any premium, does not appeal to the public.

THE WELLCOME RESEARCH LABORATORIES.

The exhibits in these laboratories show products illustrating investigations both chemical and physiological in character.

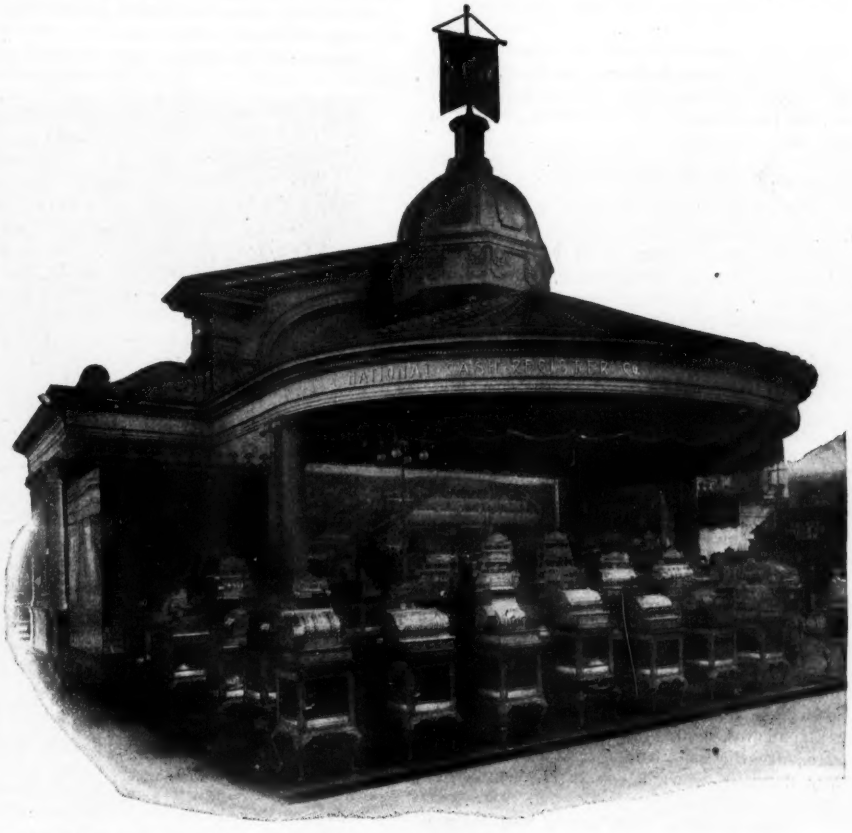
Success in the latter implies and necessitates skill in the former. Since Behring announced that "the serum of animals immunized against diphtheria contained a specific antitoxin which, when injected into other animals, could protect them against diphtheria toxin," laboratories for physiological research have multiplied. The products of the Wellcome laboratories are to the British what similar well known and carefully conducted plants in this country are to us. They include a great variety of serums, specimens of which are shown in the very attractive exhibit.

When once we are convinced that a satisfactory working

theory of the nature of infective disease and of the factors involved in natural resistance and acquired immunity has been established, then skepticism will gradually give place to confidence in this form of treatment.

Walter Dowson, M.A., M.D., is the director of the physiological laboratories. The energy and enterprise of Burroughs, Wellcome & Co. make them possible.

The exhibit of the products of their chemical research laboratories is interesting because of its including many items not usually shown in such displays. Among these may be mentioned constituents of numerous essential oils, derivatives of chaulmugric acid, salts of this acid with ethyl, methyl, ammonium, potassium, lithium, iron, copper, lead, etc.; salts of pilocarpine, hyoscine, hyoscyamine, and others. In the commercial exhibit of Burroughs, Wellcome & Co. considerable emphasis is placed by them upon what they term the tabloid brand medical equipments. In this form they claim that drugs and combinations of drugs which will meet practically every need of the physician may be prepared. The resistance offered by the tabloids to hard usage and trying climatic conditions adapts them to the use of travelers especially. Dr. Frederick B. Power, whose ability as a patient investigator is universally acknowledged, is the director of these laboratories.



Main Exhibit of the National Cash Register Company, Block No. 22. Palace of Liberal Arts.

THE MALLINCKRODT EXHIBIT OF CHEMICALS.

"Expositions are the time-keepers of progress" is the quotation from the speech by President McKinley at Buffalo, which is used appropriately by the Mallinckrodt Chemical Works in inviting attention to their exhibit, in which they show in the Liberal Arts Building upward of four hundred different items in medicinal and photographic chemicals.

The exhibit by this firm exceeds in extent and value any of the displays heretofore made by it. Besides the display of alkaloids—notably morphine, a high white shaft, value $3,500, and cocaine alkaloid in needle shaped crystals 2 inches in length—considerable skill is shown in color effects by the arrangement of chemicals which lend themselves readily to the production of artistic contrasts and pleasing effects. The chemicals shown include potassium iodide in "Walls of Troy" arrangement of crystals, ammonium bichromate, a rich red color; chromium chloride, violet; iron and ammonium oxalate, sage green, and other colored crystals. Noticeable chemicals hardly common or familiar, at least not familiar to the pharmacist, are nickel and ammonium sulphate, uranium nitrate, rubidium iodide, copper acetate, gold chloride, dry; succinic acid, potassium chloroplatinite, maroon colored crystals; thiosinamine, metallic aluminum and magnesium, together with many others, making up a display that well represents the output of a chemical laboratory, which has a reputation broader than our broad country.

FRECK'S PHARMACEUTICAL MACHINERY.

In Block 66 in the Palace of Liberal Arts is the small yet interesting exhibit of the Wm. Freck Company, of Chicago, manufacturer of pharmaceutical machines. Tablet machines, suppository molds, an improved apparatus for coating pills and tablets, and an improved triturating and mixing machine are shown. The oval globes of the coating apparatus are open at the two ends so as to allow a current of hot air to pass over the moving mass of pills or tablets as the globes revolve. Many other devices are shown which will appeal to the practical pharmacist.

In Section 52 there will be found a number of French exhibits which are distinctly creditable. Among these the display made by the Chemical Société of Paris is really remarkable for the very wide scope covered in a very limited space. The samples of chemicals shown are most diminutive, but each is carefully labeled, and the entire exhibit covers practically the whole field of chemistry. An interesting and comprehensive

exhibit is also made of photographic and technical chemicals generally.

LOW TEMPERATURE RESEARCH EXHIBIT.

In a building adjacent to the Liberal Arts Building, yet standing apart from it, is a complete plant for the manufacture of liquid and solid hydrogen, and incidentally producing liquid air. This plant is practically a reproduction of the one used by Professor Dewar at the Royal Institution, London. The successful working of an apparatus of this kind depends on the absolute accuracy of the details in its construction. A mechanical engineer will study the plant with admiration.

Briefly, the machinery consists of a carbonic acid compressor, an air compressing pump, a hydrogen compressor, a vacuum pump and a liquefier. By alternate compression and expansion of the gases first, then the liquids, a temperature of 257 degrees C. is reached and solid hydrogen obtained. From the liquefaction of chlorine by Faraday to the solidification of hydrogen by Dewar, the pre-eminence of our British cousins in research in this direction is admitted.

THE NATIONAL CASH REGISTER COMPANY.

Near the center of the Liberal Arts Building is located the main exhibit of the National Cash Register Company, which is illustrated herewith. The Ionic booth is 25 feet in hight. The background of the booth is an oil painting, 28 feet by 6 feet, showing a general view of the factory. A variety of novel and interesting features in cash registers is shown, the history of the development of the machine being illustrated by 110 specimens, beginning with the crude first attempt and including the latest achievements in the art of cash register building.

LANOLIN AND CERESINE.

The beautiful exhibit of Graab & Kranish, Rixdorf-Berlin, in the Palace of Liberal Arts, in the center of Blocks 35, 36, 45 and 46, is worthy special attention. It consists of a column of various kinds of ceresine wax, towering above a pedestal, the corners of which consist of ceresine, surmounted by vases filled with lanolins. The pedestal contains also specimens of the products of the firm, such as tapers, lanolin soap, toilet cream, ozokerite, carnauba, phonograph, leather, polishing and cable wax, artificial honeycomb, &c. American and German flags are suspended from the crown of the column. Graab & Kranich are headquarters for ceresine and lanolin, and their products are acknowledged the best of their kind in the world. The Henry Heil Chemical Company, 210-214 South Fourth street, St. Louis, Mo., are the American agents for this firm, and can supply any detailed information desired concerning their products.

The Kny, Scherer Company shows a full line of hospital supplies and surgical instruments in Building No. 56. Probably the most interesting exhibit it makes is a collection of surgical instruments taken from the ruins of Pompeii, including a screw vaginal speculum and trochar, needles, spring scissors, spring forceps, blunt hook, elevator and raspator, used in operations for injuries of the cranium. These particular instruments are the original specimens taken out of the ruins of Pompeii, and not mere replicas such as are shown in the Italian Government Building.

CRÊME SIMON.

We present herewith a view of J. Simon's booth in the French perfumery section of the Liberal Arts Building. No doubt but that many of our readers have already visited or will visit this exhibit some time during the fair. An attractive attendant is in charge and visitors never leave empty handed, either receiving liberal samples of the celebrated Crême Simon or a sachet of Simon's face powder; likewise attractive booklets, entitled "Views of Paris."

It was in 1860 that J. Simon first devised the product named Crême Simon, and which to-day can be found at leading druggists in all parts of the world.

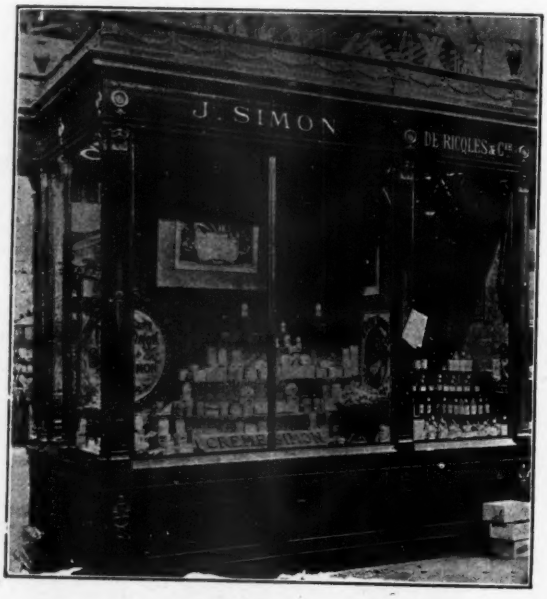
Crême Simon was the first improvement made by pharmacy in the preparation of cold cream. For three or four centuries cold cream had been made by perfuming fatty substances, which rapidly turned rancid after having been rubbed into the skin, causing skin eruptions, etc. No wonder then that the fashionable women of the world have eagerly bought this product, the sale of which reaches into the millions.

Crême Simon was exhibited at the New Orleans Exposition of 1886, where it secured a gold medal; in Chicago, 1893, it was classed "Hors Concours," French Perfumery Section, and it again obtained the Paris, 1900, gold medal.

Its sales in the United States are increasing very rapidly, the importations for the first six months of 1904 being equal to 83 per cent. of last year's total importations.

Judicious advertising in the leading magazines, expensive samples, in addition to the work being done at St. Louis, can alone explain these remarkable results at a time where a business depression no doubt exists.

Pharmacists can obtain the illustrated price-list and samples



Crême Simon Exhibit, Block 52, Liberal Arts Building.

by addressing the United States representative, Geo. J. Wallau, 2 and 4 Stone street, New York City, who likewise represents the well-known Carabaña Aperient Water.

Having covered the main features of interest to pharmacists as shown in the Palace of Liberal Arts, the pharmacist will find himself near the central exit in the southwestern façade, opposite the Sunken Gardens.

The Government Building.

The next point of special interest is the Government Building, the main entrance of which faces the Sunken Gardens, from the southeast. On entering this building from the main entrance the visitor will find on the left the exhibit of the Treasury Department. This includes a mint in practical operation, and, adjoining this mint, a very complete display of the United States Public Health and Marine Hospital Service, which is under the direction of S. W. Richards, a pharmacist in the service, who, by the way, was the first pharmacist in the Government service to be accredited officially as a delegate by the United States Government to the American Pharmacists' Association. Members of the American Pharmacists' Association who attended the Philadelphia meeting will recall the occasion with pleasure.

The first display observed on the left hand as one enters the main portal of the building is a case containing almost a complete collection of culture tubes of those infectious diseases the bacilli of which have been identified. Another very interesting collection shows the life history of various pieces of mosquito, notably the stegomyia fasciata, which have been

proven to be the bearers of yellow fever, and the anopheles, the distributer of malarial infection, and the ordinary culex, which has recently been reported as being the bearer of the infection of dengue, or break-bone fever. Another very interesting feature of this exhibit is a complete traveling laboratory, so packed that it can be taken into an infected territory and satisfactory bacteriological examinations made, without either running water or gas connections. The working apparatus in this laboratory is packed in special cases in such a manner that any desired piece of apparatus can be taken out without unpacking the entire case. The standard regulation laboratory of the service is also shown as it appears at the various stations, which are scattered all over the world—for this is a service which maintains hospitals in the principal ports in foreign countries, as well as in the United States.

A complete electro-therapeutic outfit is included in the display, comprising X-ray tubes, Finsen light apparatus, &c.

The popular interest in radio-activity is shown by the crowds that attend the lectures given in the small lecture room of the department. These lectures are given daily, at 11.30 a. m., and at 3 p. m., and are invariably given to an audience that fills the entire chamber and which manifests its interest by the very closest attention. Several different lecturers have presented the subject, among them being Dr. George F. Kunz and Prof. Charles Baskerville of New York.

The lecture room is fitted up with all the necessary physical apparatus to present the lecture in a satisfactory manner, and since the lecturers and their assistants repeat their work so often, the experiment go off with a most commendable smoothness and celerity.

THE DEPARTMENT OF COMMERCE AND LABOR

embraces the Bureau of Standards, and this Bureau makes a very interesting exhibit, both from the viewpoint of popular and of scientific interest. The exhibit of the bureau, which is just north of the Mint, in the Government Building, embraces the working standards used in examining mass, capacity, length and electro-motive force, each of these standards being grouped together in a case of its own. Among the interesting contents of the case devoted to balances is an old Mexican balance, showing the earliest and most primitive form of equal arm balance.

The methods of standardizing of weights is shown by a balance so arranged that the weights can be shifted from one scale pan to another without the operator being in immediate proximity to the scales, and thereby affecting the temperature. This is done by means of rachet pinions on long shafts, which can be in a different room if required. In operation, the two weights which are to be examined are placed on the respective scale pans and allowed to remain for 24 hours, so as to insure their having precisely the same temperature. The operator, who is usually at a distance of from 10 to 20 feet from the scales, then releases the scales and takes note of the degree of vibration of the arm of the balance, by means of a telescope provided with hair lines. By turning the shafts the operator can then shift the two weights and release the arm and again

View of Sunken Gardens from Portico of Government Building, Looking North. Palace of Liberal Arts on the Right; Mines and Metallurgy on the Left; Manufactures in the Background. Photographed by F. Lamson Scribner.

A rather attractive representation of an operation is represented with life-size wax figures, taking the part of surgeon and patients. Another feature of this exhibit is a model of the Camp Perry, which was established at Fernandino, Fla., in 1898, as a yellow fever hospital camp, and rebuilt as a permanent camp in 1901. This camp affords accommodations for 1200 patients. The Reedy Island Quarantine Station at the mouth of the Delaware is also shown in the form of a model.

Pharmacists visiting this exhibit should not fail to make themselves known to Mr. Richardson, who will be pleased to extend every courtesy possible to pharmacists.

THE RADIUM EXHIBIT.

Adjoining the Treasury exhibit is that of the Department of Commerce and Labor, the main interest in which for chemists and pharmacists lies in the very complete collection of radio-active substances contained in the case against the wall of this department, opposite the attractive panoramic view of the Colorado Cañon in Arizona—a view, by the way, which will arouse delightful memories in those who attended the California meeting of the National Wholesale Druggists' Association three years ago.

observe the vibration of the arm of the scale through the telescope. By means of riders, a known weight can then be released on either arm of the balance as desired. Observation of the amount of vibration of the index and of the effect of the rider upon the vibration gives data from which the observer can calculate the actual difference in the mass of the two weights. As a matter of fact, it is absolutely impossible to have any two masses of precisely the same weight, although, of course, the variation is so minute as to be practically negligible. In connection with the work on standardization of weights, there is an exhibit of balances made by various manufacturers.

On another table a standard polariscope is shown, and the methods used in polariscopic examinations of sugar are demonstrated.

A manufacturers' exhibit of measures of capacity is also shown, together with an interesting collection of measures of capacity of some historic interest.

The standard yards and meter measures are shown, and the apparatus is also shown, in one of the cases, which is used in comparing standards of length. This process is comparatively simple, as the actual length of the standard is compared directly with the measure under observation by means of direct inspection through a microscope and eye-piece micromotor lined on a movable arm.

In another portion of the exhibit a collection of standard thermometers is shown, including pyrometers and thermometers, couples and platinum resistance thermometers.

TESTING CLINICAL THERMOMETERS.

To pharmacists and physicians the most interesting feature of this exhibit will be found on the table in the remote corner where the complete apparatus for standardizing clinical thermometers is shown. This table, which is illustrated herewith, embraces the entire set of apparatus as used at the Bureau in Washington. The centrifugal machine s shown at the right end of the table, the comparison tank near the center, the hot and cold wat r tanks with necessary supply and overflow connections are mounted on a cast-iron support about 75 cm. above the table. Inside the hot water tank there is an electric heating coil wound in two sections inside a thin-walled copper tube. The copper tube is wound in a spiral of 15 cm. diameter. The two sections of this coil can be joined by means of a simple switch to give fast, medium and slow heating, the latter being sufficient to keep the temperature 15 degrees or 20 degrees below the boiling point.

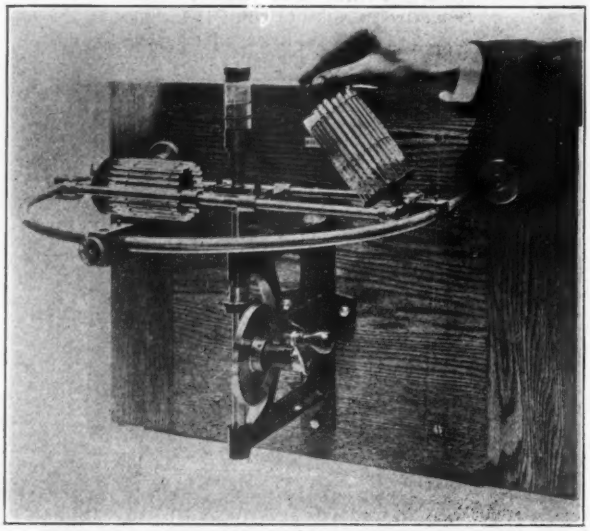
The supply of electrical energy for the comparison tank is controlled by the switches and rheostat handles, shown on the front of the table, and by a wattmeter mounted inside of and read through a small plate glass window in the top of the table. On top of the table is shown a reading stand, in which the holders are placed and the thermometers read through a small microscope. There is also shown a tray with holders, to illustrate the method of handling the thermometers. The scales of the two standard thermometers in the tank are illuminated by the incandescent lamp mounted on the flexible stand in the rear. The large drawer on the left of the table is used to store thermometers undergoing test, while the door on the right is a switchboard, on which are mounted the necessary switches and the rheostats. The door is hinged and opens outward, thus rendering all the connections accessible.

In the process of testing the temperature of the bath is quickly brought up to within a fraction of a degree of the temperature of the lowest test point (96 degrees F.) by the hot water circulation, and then by means of the rheostat R and the wattmeter W the current is regulated to maintain the temperature 96 degrees F.

Four holders are then put into the bath, and by momentarily throwing the switch to the side marked "Fast" the temperature of the bath is brought to exactly 96 degrees F. The temperature can be brought with ease to within 0.01 degree F., and it rarely happens that the readings of the two standard thermometers differ by more than this amount. The readings of the two thermometers are then entered on the test record sheet 34a. This procedure is repeated until all the holders have been dipped at the first test point.

After all the thermometers have been dipped, the holders are mounted one at a time in the reading stand. One observer reads the thermometers as they are successively brought into the field of view of the microscope by turning the knurled bead of the arbor on which the holders are slipped, while another assistant records the readings on the test record sheet. With a little practice the thermometers may be read at the rate of 20 per minute without sacrificing accuracy, as has been demonstrated by repeated trials. The readings, even when made by different observers, rarely differ by more than 0.03 degrees F.

After all the loaded holders have been read at the first test point, the bath is brought to the next test temperature, 100 degrees F., and the clinical thermometers are again dipped and read. This procedure is repeated for the other test points, 104 degrees and 108 degrees F. The holders are then mounted two at a time in the centrifugal machine and the mercury is made to retreat below 95 degrees, and the entire series of observations at the four test points are repeated.



Centrifugal Machine Used to Throw Back Index in Testing Clinical Thermometers.

For the above description we are indebted to L. A. Fischer and C. W. Waitner of the Bureau of Standards, and to S. W. Stratton, chief of the bureau, who has afforded every facility for a study of the methods of the bureau.

THE DEPARTMENT OF AGRICULTURE.

Passing toward the northern exit of the building, the pharmacist will see much that will interest him, as a citizen if not as a pharmacist. The display made by the Post Office of mail carriers on sleds and burros, the automatic cancelling device, the astonishing collection of articles that have found their way to the dead letter office, the humorous biographs, the passage of the fast mail, the receipt of mail from the steamers and other interesting incidents connected with the postal service are well worth at least a brief survey.

Turning now and passing toward the southerly end of the building, the pharmacist will find that the Smithsonian Institution has an interesting exhibit representing the multiform aspects of scientific knowledge and endeavor covered by that institution. In the astro-physical department of this display will be found a reproduction of the complete spectrum, some 24 feet in length, including the "new spectrum" of Langley, which is eight times as large as the original one discovered by Newton. It will be remembered that the discovery of this spectrum was effected by bolometers, and that it does not pass through glass, but only through rock crystal. In the third case from the main isle, in the collection of pottery and utensils, will be

found a number of stone pestles, among the archeological collection in the West Indies. Some of these are carved in what might be considered comparatively elaborate effects. While these pestles were primarily intended to be used for pounding grain for food, it is quite within the limits of possibility that they were occasionally used for what we would now call pharmaceutical purposes.

The next object of pharmaceutical interest in shown in the display of the Department of Agriculture, which occupies the

Commerce, a Heroic Figure by Konti.

entire southwestern end of the Government Building. Here the work of food investigation and the ordinary work of the agricultural chemist is being carried on during the Exposition, so that the observer will have an opportunity to see an analytical laboratory in actual operation. For instance, the department is now engaged in a study of the chemical and physical changes involved in the ripening of fruit and the determinations of moisture, acidity, &c., is now being carried on in this department of the exhibit, and from the data there collated it is expected that a bulletin will be prepared for the guidance of fruit growers, regarding the keeping qualities of ripe and unripe fruit under varying conditions.

PRESERVATIVES IN FOODS.

Work is also being carried on by the department in the determination of the effect of the addition of preservatives to food stuffs, such as preserved vegetables, fruits, &c. It has been claimed by some of the canners that formaldehyde is generated in the process of canning, whereas experiments carried on in the department indicate that, so far from this being the case, the reverse is really true, as a certain amount of formaldehyde may be added to the goods in the course of the process and it would be impossible for the chemist to detect this at its conclusion. The two features of special interest to pharmacists in the display of the Department of Agriculture are the crude drug exhibits made by the Bureau of Plant Industry and the showcase containing specimens of adulterated drugs, which appears in the corner of the exhibit of the Bureau of Chemistry of the Department of Agriculture, near the main aisle, and which is described in full in the adjoining column, by Lyman F. Kebler, Ph. C., chief of the Drug Laboratory of the bureau.

(Written for the American Druggist.)

EXHIBIT OF THE UNITED STATES DRUG LABORATORY AT THE ST. LOUIS EXPOSITION.

By Lyman F. Kebler,

Chief of Drug Laboratory, United States Department of Agriculture.

The exhibit of the United States Drug Laboratory is located in the southern portion of the Government Building, and forms part of the display of the Bureau of Chemistry. The samples shown are representative of the goods examined at the Drug Laboratory in the regular course of its work. The material in each case is a part of the original packages at present in possession of the laboratory. The display is of particular interest to every druggist, because it represents not only the quality of some of the goods delivered him, but also the kind of chemical reagents he is probably using in testing his goods and making his preparations from. Many of the chemicals are marked C. P., a designation which is commonly supposed to mean that they are the best articles obtainable, but, in many cases, they fail to meet the pharmaceutical requirements for medicinal chemicals, and the writer has good reasons for believing that some dealers supply many orders for medicinal and C. P. chemicals out of the same container.

In order that the samples here referred to may be readily found, they will be considered in alphabetical order.

Acetic Ether, U. S. P. and "Rectified."—The former contains about 60 per cent, acetic ether and the latter about 80 per cent., the remainder being mostly alcohol. The latter also left a residue which possessed the odor of certain fertilizers. This odor was evidently carried through from the commercial calcium acetate used in its preparation. When the jobber was informed concerning the nature of his goods and notified that he must have an article of U. S. P. quality, he was not slow to label the "rectified" product U. S. P. and send it to us again. After considerable delay and trouble we finally secured an article of the desired degree of purity, excepting that the manufacturer had neglected to redistil the ether after dehydrating it with calcium chloride, and the result was an article contaminated with calcium chloride. In order that our analytical work would be delayed no longer, we decided to redistil it ourselves. It might be interesting to note here that after about six months hammering we are now getting the acetic ether of proper quality without being compelled to redistil it at the laboratory.

A similar story might be told about the ordinary ether. The contractor was informed that a certain brand of ether would no longer be accepted at the Bureau of Chemistry, because it was of inferior quality. It was not long before we were asked whether he would accept another sample of the brand of ether in question for examination, and an affirmative response was made, with the result that the sample of ether submitted tested up well and every delivery made since of this same brand has been of satisfactory quality.

Benzol, C. P.—This chemical is used as a solvent in analytical work and should be of the highest grade of purity, especially in plant analysis. The sample exhibited bore the name of a good firm, but the chemical contained little benzol.

Calcium Chloride and Oxide, C. P.—These chemicals are contaminated with salts of aluminum and magnesium. The former is highly alkaline to litmus. The calcium oxide is of especially poor quality, containing in addition to the above impurities sulphates, chlorides and siliceous matter and is partially air slacked. A good sample of powdered calcium oxide when mixed with half its weight of water and stirred well will leave a dry residue.

Corrosive Sublimate, Labeled Calomel.—The package shown was labeled "Hydr. chlorat. Mite," but the contents of the bottles proved on examination to be corrosive sublimate. An accident of this character is reprehensible and an error of this kind certainly ought not to occur in any well regulated establishment. The physical appearance is so different from that of calomel that any one acquainted at all with these chemicals would have suspected the nature of the chemical. Eternal

vigilance and unlimited care should be exercised in dealing with such highly poisonous goods.

Carbon Tetrachloride, C. P.—The properties of this chemical promise an extended use for it, not only in the arts, but also as a reagent in analytical work. At present it is yet a little expensive, but its uninflammable character, stability, solvent properties and immiscibility have given it a place in analytical work. The sample exhibited is the ordinary commercial article. There is no excuse for supplying an inferior article when the pure product is called for, because a high grade article can readily be prepared.

Chloral Hydrate, U. S. P., contains chloride and alcoholate, is damp and melts at 54 degrees C. It is remarkable how much of the chloral hydrate now on the market is of poor quality. An important article like this ought to be of the highest possible purity, especially since it is used exclusively as a medicinal agent.

Chromic Acid of a high quality is readily obtainable, if insisted on, but the product as usually supplied continues to be one of the most unreliable articles on the market. It commonly contains larger or smaller amounts of sodium acid sulphate, which is introduced in the process of manufacture. The sample shown represents the best grade usually supplied and contains over 8 per cent. of sulphate calculated as sodium acid sulphate.

The Cochineal shown is adulterated with 25 per cent. of powdered talcum.

Copper Sulphate, C. P., "Absolutely Free from Iron."—The contract called for an iron free product, and the label indicated absolute freedom from that impurity, but an analysis showed that a compound of iron is present.

Drugs: Aconite Root, Belladonna Leaves, Cinchona Bark, Red, Hydrastis and Pilocarpus Leaves.—These samples represent the plant drugs as delivered ready for the druggist's use. In each case the package is marked "ground." The Pharmacopœia requires these drugs when used in the manufacture of its preparations to be passed through a No. 60 sieve, except the pilocarpus leaves, which must be a No. 40 powder; but these samples are so coarse that a considerable proportion will not pass through a No. 4 sieve. The term "ground" in milling has an indefinite meaning, and dealers in plant drugs ready for the druggist's use should discard the term and use only the fairly accurate system of the Pharmacopœia, which is based on the number of sieve the powder will pass through. What use a retail druggist could make of such ground drugs is not conceivable to the writer. He certainly could not be guilty of employing them in making pharmacopœial preparations, and their use in pills would be impossible. In operating on large amounts it is frequently necessary to use a fairly coarse powder so as to avoid difficulties, but the writer has never seen such coarsely ground drugs used for the largest operations. It is impossible to exhaust them by the ordinary methods at the disposal of druggists.

Potassium Chloride, C. P.—One sample consisted almost entirely of sodium chloride and the other contained about 10 per cent. of the same salt. When the contractor was informed that the potassium chloride was contaminated with sodium chloride, he wrote back, wishing to know how much sodium chloride it contained. There is no trouble at all in making potassium salts that will not indicate the presence of sodium compound by the flame test, and when an article of C. P. quality is ordered its acceptance or rejection should not depend upon the amount of sodium compound present; the simple fact that it is present should be sufficient.

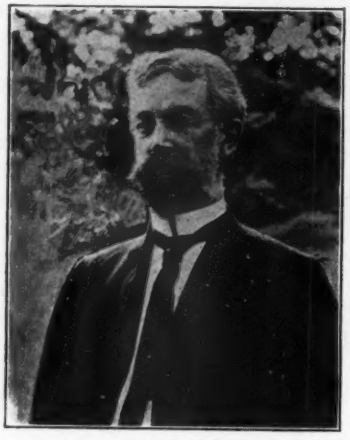
Potassium Chromate, Neutral C. P., is employed as a delicate indicator in water analysis and should be of good quality. The sample on exhibition is very alkaline, contains chloride and makes a very dirty solution when dissolved in water. Nearly all chemicals contain smaller or larger amounts of material insoluble in water. It seems desirable for chemical manufacturers to exercise more care in this respect.

Potassium Cyanide, 98 Per Cent. Pure, is in many ways the most ingeniously adulterated chemical met with. The sample consists of a mixture of potassium and sodium cyanide, so diluted with sodium chloride, either added or contained as an impurity of the articles which are used in its manufacture, that an analysis when calculated as potassium cyanide indicates the amount of purity represented by the label. There can be no objection raised to sodium cyanide of mixtures of sodium and potassium cyanide, but a transaction of the above character is certainly not above reproach. Let the articles be labeled what they are, then no one will be deceived or gotten into trouble.

Potassium Sulphuret, C. P., proved to be ordinary liver of sulphur, obtained by fusing together the proper proportion of sulphur and potassium carbonate. The impurities of this compound when judged from a C. P. standpoint, are naturally many. This sample contains chlorides, sulphates, thiosulphates, polysulphides and carbonates.

Sodium Benzoate, U. S. P., like most chemicals of this name, does not comply with the required standard. It contains chlorides.

Sodium Hyposulphite, C. P. and Commercial.—The commercial article, at 2 cents per pound, is superior to the C. P. product in every respect. The C. P. chemical is contaminated with iron and has a very inferior physical appearance.



F. LAMSON SCRIBNER,
Special Agent in Charge of the Exhibit of the Bureau of Plant Industry, Government Building.

Sodium Sulphite, C. P. and Commercial.—An extended investigation showed that the C. P. chemical is inferior to the cheaper commercial article so far as the presence of sulphite is concerned, but the recrystallized product usually gives a better aqueous solution. The probable reason for this is that the more the sulphite is handled the greater is the degree of oxidation into sulphate.

Tartaric Acid, C. P.—Off in physical appearance and is contaminated with a lead salt. This is an extremely poor product and it looks as if gross carelessness existed somewhere, because no manufacturer would knowingly send out such an article, except for use in the arts.

Uranium Acetate, C. P.—The quality of the uranium salts so far as examined is certainly far from satisfactory. The sample on exhibit, according to the best method of analysis, contains about 50 per cent. of sodium acetate.

The Uranium Chloride delivered on an order calling for a C. P. article, is contaminated with a salt of copper and contains 33 per cent. of sodium sulphate calculated on the anhydrous basis.

THE BUREAU OF PLANT INDUSTRY.

F. Lamson Scribner, agrostologist to the Department of Agriculture, who is in charge of the display of the Bureau of Plant Industry, is an enthusiast in his work, and brings to bear a large and varied experience, including two years' sojourn in the Philippine Islands, where he was engaged in a study of the local flora for the Department. Mr. Scribner will be pleased

to welcome all pharmacists who are interested in the botanical aspects of their calling, and to point out to them the many interesting features of the exhibit under his charge. This embraces not only a collection of crude drugs, which will be found near the southwestern entrance of the building, but a large number of growing plants which are used as borders in the out of door exhibit of the Bureau, near Station 7 of the Intramural Railway, and opposite the Philippine reservation. One of these plants is illustrated in this issue. One of the interesting features of the exhibit of this Bureau is a large terrestrial globe, on which are traced the routes of the several botanical and entomological explorers who have been sent out from time to time by the Agricultural Department. Some of these have made the circuit of the globe several times, in carrying on special lines of investigation for the Department.

The Fisheries Building.

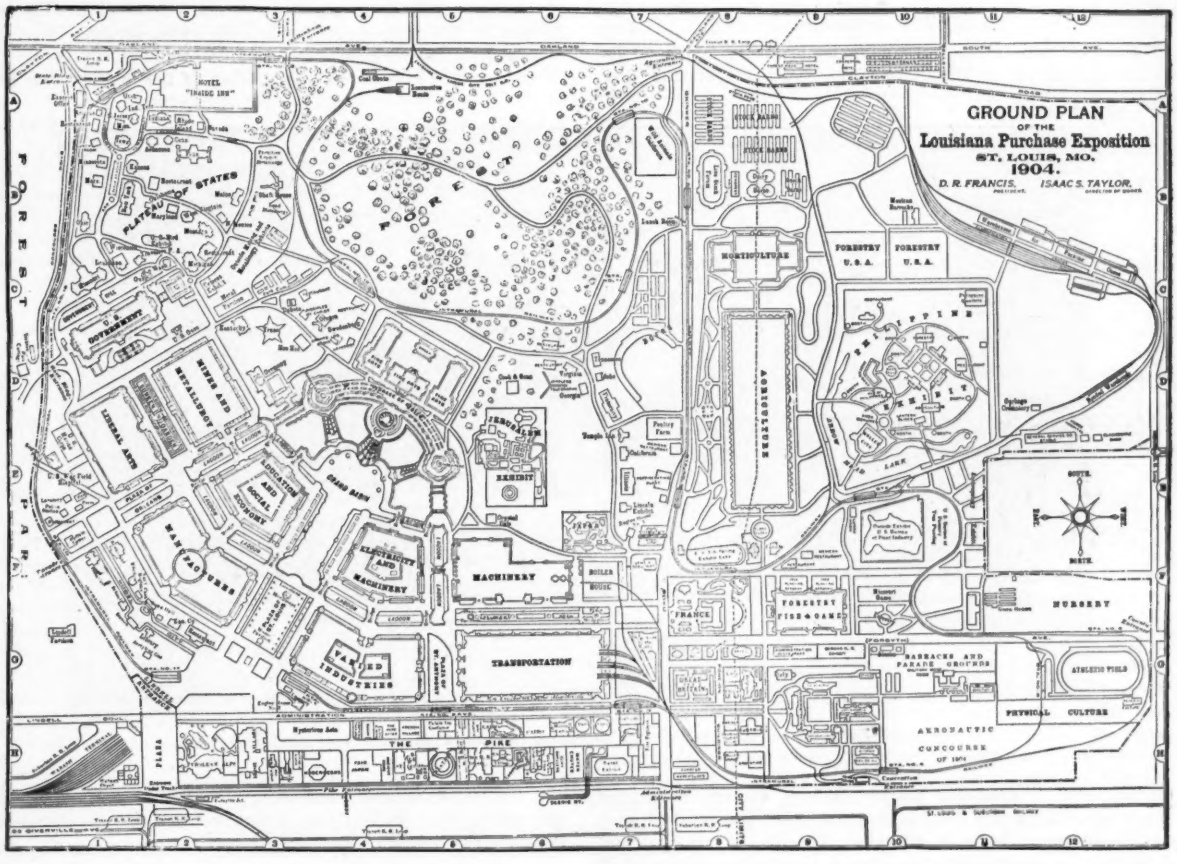
To the South of the Government Building is the Government Fisheries Building, in which are shown all the various methods of catching fish in use in the waters of the United States, on a commercial scale; in fact, the exhibit goes further, embracing handsome specimens of the trout rods, salmon and grilse rods, flies, &c. In the several pools which are located in the courts of this building are found seals and various fishes, including a number of salt water fish, some of the pools being kept filled with sea water. The only item of special interest to pharmacists here is the very excellent model showing the methods of sponge fishing, which is located near the center of the building and on the westerly side. Those who are particularly interested in fish oils will also find, on the easterly side, a number of cases containing collections of various fish oils, including the different varieties of cod liver oil.

In the Oregon exhibit will be found several bales of cascara bark and of Oregon grape roots. (Berberis nervosa Pursh.)

The Palace of Mines and Metallurgy.

All through this building will be found occasional exhibits of mineral waters, particularly in the corner sections, and since some of the mineral waters, notably Apollinaris, are shown in the Agricultural Building, it seemed to be a matter of regret that some effort had not been made to consolidate these displays. Portugal, Block No. 23, and the Argentine Republic also show mineral waters.

In Block No. 21 the Solvay Process Company show in a most interesting and graphic manner the entire process of working salt brine and the results of this operation. All the crude material entering into the operations is shown, and each step is illustrated by specimens of the products.



HUNYADI JANOS EXHIBIT.

In the Mines and Metallurgy Building, Block No. 23, aisle B, is a large bottle, being a fac-simile of the world-famed bottle and label of this celebrated Hungarian aperient water, standing 30 feet high. At this exhibit the Hunyadi Janos people are giving away a number of catchy souvenirs, among them being an illuminated card showing a dancing girl wearing an apron, the color of which changes with the weather, thus making a unique barometer.

A curious wicker work basket used in the transportation of tin ores in Ceylon and Siam, will arrest the attention of a sightseer passing Section 23.

While pharmacists are supposed to be more interested in curing than killing, there is sufficient of the original savage left in most pharmacists to cause them to take at least a cursory interest in the display of guns and the model of a modern turret or great battle ship which forms the central feature of the display of the Bethlehem Steel Company in Block 32.

Texas shows crude oil and its products in Block 63, and also exhibits 1200 pounds of mercury, together with the various

ores found in that State, from which mercury is extracted.

Pharmacists who have kept in touch with the radium craze will be interested in seeing uraninite, a pitch blende which is said to be richer in radium than any other specimen yet found. This is shown near the center of Block 71, in the Colorado exhibit. In a case on the southerly side of this exhibit is also shown a sample of carnolite, a double vanadate of uraninite and potassium, together with a specimen of radium extracted from it, with an autograph letter from Sir William Crooks.

The Canadian exhibit in this division, Block 64, includes magnesite, containing as high as 95 per cent. Mg. Co., a very handsome specimen of talc-zinc blende, and antimony ore is shown, as well as the largest crystal of mica on record, 7 feet in length. Cinnibar from British Columbia, and molybdenite from Ontario, are also shown in this collection.

The Palace of Education.

Entering the Palace of Education and Social Economy, the familiar name of the H. K. Mulford Company greets the pharmacist, this firm having a very artistic display, embracing views illustrating the process of manufacture of curative sera and biological products of all kinds. The display also includes a number of capsuloids, compressed tablets and other pharmaceutical products, but by no means embracing a full line, the main interest centering in the biological products, which are presumably entered here as having to do with public hygiene.

Almost immediately across the aisle to the west of the Mulford exhibit is shown a model of the method pursued in the manufacture of biological products by the Imperial Hygiene Laboratory of Tokio. All the southwestern corner of the Palace of Education is devoted to illustrations of defective and special lines of education, the possible interest in which lies in its relation to sociological problems. In the extreme southeastern corner of this building will be found the educational display made by the various universities, and among these will be found some exhibits which are of particular interest to pharmacists, though the pharmaceutical, as such, play but little role in the Exposition. The only foreign schools of pharmacy represented, so far as we were able to learn, are the school of Montpelier, in France, which exhibits some views and books in the French section, located in the eastern-central section of the building, and the school at Rennes, which shows, in the extreme southeast corner, a photograph of the school and of the botanical garden, together with various theses submitted by students. Another interesting feature of this French exhibit is a collection of books, among which is a history of "Pharmacy Centralé de France," which is, however, so jealously guarded as to be practically inaccessible.

The New York College exhibit will be found occupying two units in the New York State exhibit in this building.

THE CAUSE OF HAY FEVER.

Among the most interesting exhibits contained in the German section of the Educational Building is that of the State Hygienic Institute in Hamburg, containing specimens of the various substances which excite hay fever, and a collection of 16 plants that cause hay fever, as follows: Reed grass, thistles, lily of the valley, rice, segge rye, quick grass, meadow grass, fox-tail of the meadows, solidago memoralis, solidago odorata, Indian corn, ambrosia artemisifolia, and ambrosia Trifida. Illustrations are also shown of the effect of the toxin on the eye and various other data concerning the work of Professor Dunbar, the chief of the institute, whose work on hay fever has resulted in the preparation of polantin.

The Palace of Education, with Glimpses of the Lagoon in the Foreground.

Palace of Varied Industries.

Throughout the Palace of Varied Industries will be found displays which will interest the druggist as a person endowed with curiosity if not merely as a pharmacist.

In Block 57, near the center of this exhibit, is a joint display of six Bulgarian manufacturers of oil of rose. The display in each case consists of specimens of the oil contained in the original glass bottles and other specimens, contained in cut glass bottles, each exhibit having a showcase in the form of a niche in the base of what appears to be a mass of rock rising some 30 feet above the level of the floor. This mass of rock serves as a base for two figures, one of which represents a Turk and the other a Bulgarian, engaged in combat, illustrating the Bulgarian War for Independence from the rule of Turkey in 1877.

The exhibitors are the Societe Producteur Bulgare, Ch. Djidjeff & N. Zoeff, of Karlovo; M. S. Stefanoff, of Philipope and Klissoma, and Botu Pappozoglou & Co., Christo Christoff and Shipkoff & Co., of Kazanlik.

The Bulgarian Government maintains a fountain of rose

water, which flows out of the mass of rock on which the figures stand and falls into a basin beneath.

M. Stancioff, the Commissioner from Bulgaria, will be pleased to extend special courtesies to pharmacists who make themselves known as such, and to introduce them to such of the exhibitors as happen to be present. M. S. Stefanoff and Djidjeff & Zoeff both desire to secure American representatives, and M. Stancioff will be pleased to correspond with any one in a position to undertake an American agency to advantage.

In addition to his exhibit in the base of the statue, M. Stefanoff has an exhibit in a showcase, and shows there one bottle of a special high grade of green oil, which is probably the most expensive rose oil ever shown in America, as the single kilo shown cost about $400. It is hardly necessary to say, however, that this is not the regular commercial article which Mr. Stefanoff desires to place on the American market. It was made by him more with the view to determine the possibilities in the manufacture of a very select oil rather than as a commercial venture.

THE AMERICAN SODA FOUNTAIN COMPANY.

At the junction of Fourth and F and Fifth and F streets in the building of Varied Industries will be found a display of American Soda Fountain Company, embracing 11 distinct fountain installations with all the latest and most complete appliances and apparatus. These fountains are shown as an exhibit and for the inspection of dispensers. The company has not utilized them for dispensing soda fountains, believing that the best interest would be served by showing the fountains not in operation. As they are now shown any interested visitor can see the entire work and the parts of the fountain, and the attendants will cheerfully give all needed information in connection with the fountains shown.

THE HISTORY OF PLAYING CARDS.

The United States Playing Card Company make an exhibit in Block 46 of the Palace of Varied Industries which will interest every one who takes the trouble to look into it. The special feature of interest in this exhibit consists in the historical collection made by Curlow, and purchased by the company. This collection embraces the most complete set of playing cards in existence, including some which date back to the fourteenth century, and covering practically every country in which cards are played. These cards are mounted on wing frames, and arranged chronologically, so that by beginning at the left and following up the exhibit the entire history of playing cards is illustrated. In addition there is also shown a number of historical works on cards and card playing.

F. Weber & Co. show a collection of artists' supplies in Block 46, east of the main entrance, and to the left of door No. 44.

The Palace of Electricity and Machinery.

In this age of electricity there is naturally much that is new and interesting to every one in the special home of electricity and machinery; for the pharmacist, however, the particular interest in this building centers in the really remarkable collective exhibit of chemistry made under the direction of the Prussian Board of Education, which is located near the southeastern entrance of the building. The ground plan of this exhibit, together with the detailed description, written by Dr. Otto Zwingenberger, is given elsewhere. Probably no single feature of the Exposition will impress the thinking pharmacist more than the care, the foresight, the skill and the effectiveness with which the Germans have prepared their exhibits. In addition to the collective exhibit made to illustrate the present condition of theoretical and applied chemistry in the German Empire it has a collective educational exhibit in the Palace of Education, which embraces a most instructive collection of displays illustrating the status of medicine and medical teaching. The German Government has also arranged for a collective display of scientific exhibits, to which teachers, individual inventors and manufacturers have all contributed, so as to make this exhibit truly representative of the really high standards which prevail in that country. It is somewhat of a question whether the pharmacist will be most impressed with these particular features or with the really admirable group of exhibits of pharmacy, chemistry and the allied arts which are made by Great Britain in the Liberal Arts Building. While the purely educational are the features pre-eminent in the German exhibits, the individual exhibits of pharmaceutical manufacturers in the British sections are such as to impress the sightseer forcibly with the resources, the capacity and the enterprise of the British pharmaceutical manufacturers. The American pharmacists cannot but be impressed with the comparative paucity of the exhibit of American pharmacists and chemists, only two of whom, so far as we can recall, are represented at all, and to these two—Mulford & Co. and William R. Warner & Co.—all credit should be given for their enterprise. In view of the acknowledged excellence of American pharmaceutical products, the failure of our manufacturers to adequately present this aspect of American industry to visitors to the Exposition is all the more regrettable. The visitor from abroad is insensibly led to believe that since we show nothing we have nothing to show, and at least one visitor, from Buenos Ayres, made the comment that the Exposition seemed to him to be rather an exhibition of foreign manufactures in the United States than an American exposition.

To the left of the main entrance of the Electricity Building will be found an installation of the Marconi system, and near the door to the central court the wireless telephone installation also attracts much attention.

The Federal Electric Company makes a specialty of electric signs for drug stores, as shown in Section No. 36 of the Palace of Electricity, which is near the wall, and faces aisle G. Many of the electric lighting companies make special deals with pharmacists which enable them to have one of these signs at practically no cost.

Several manufacturers of electro-therapeutical appliances have booths in Block No. 4, including M. Scheidel & Co., of Chicago, and Kny, Scherer Company of New York, who show an oculist's electro-magnet, in connection with various other exhibits.

(Written for the American Druggist.)

THE COLLECTIVE CHEMICAL EXHIBIT OF GERMANY.

By Dr. Otto Zwingenberger,
Secretary of the Chemical Exhibit in Charge.

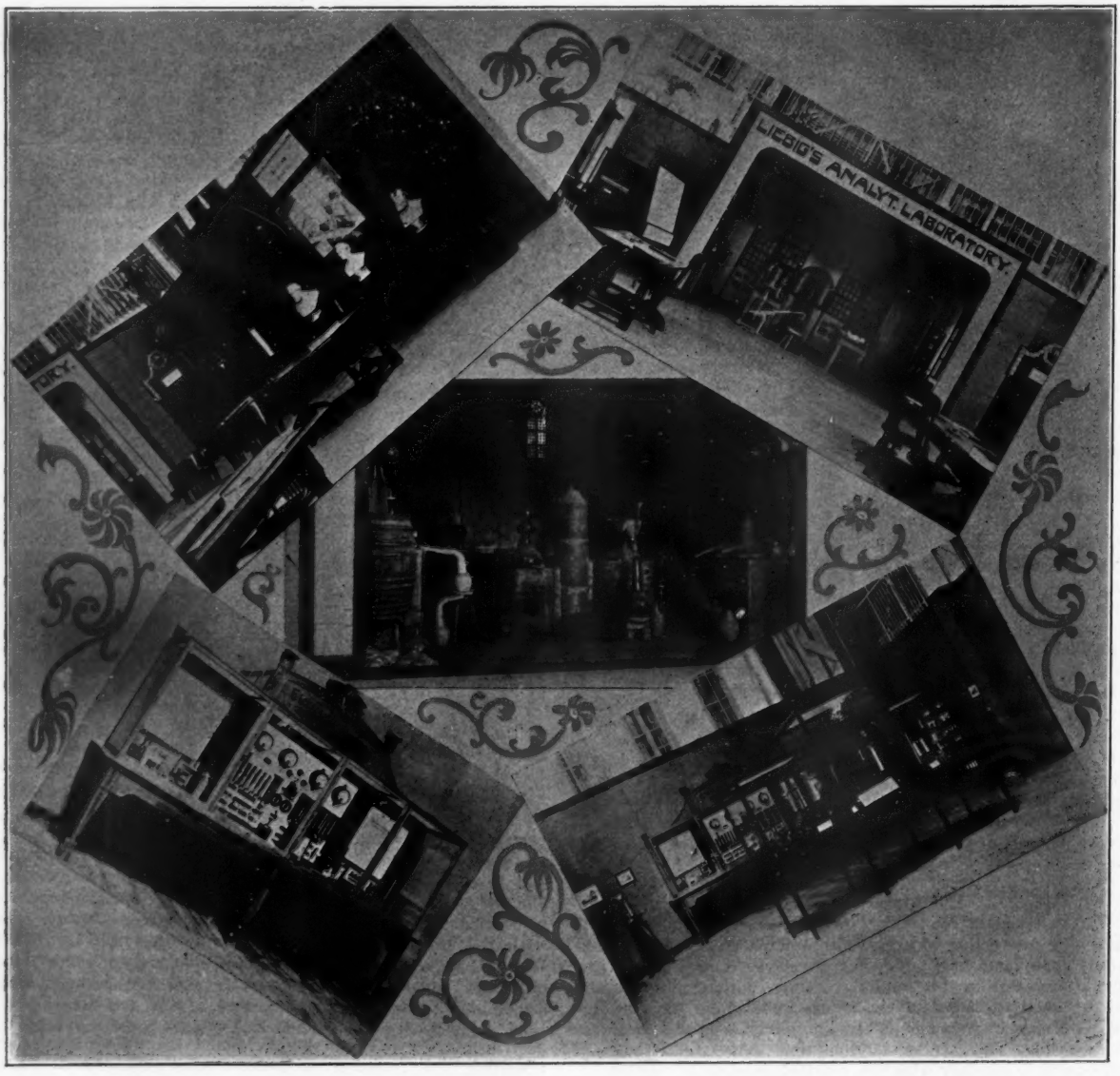
While the chemical industries were well represented by individual exhibits of manufacturers at Chicago in 1893 and at Paris in 1900 no systematic effort was made at either of these expositions to present a collective exhibit illustrating the scientific aspects of chemistry. At the St. Louis Exposition, however, wholly different methods have been pursued. The Royal Prussian Board of Education took the initiative and invited the co-operation of the large chemical manufacturers, the various chemical and chemico-technical societies of the teachers of chemistry in the organization of a commission to be charged with the preparation of a representative collective exhibit illustrating the effective co-operation between pure and applied chemistry, which has accomplished so much in Germany. This commission embraced representatives of the Deutsche Chemische Gesellschaft, the Verein zur Wahrung. der Interessen der Chemischen Industrie Deutschlands, the Verein Deutscher Chemikes, the Deutsche Bunsengesellschaft, the Royal Prussian Board of Education, and manufacturers of apparatus. The post of general secretary to this commission was accepted by Dr. C. Harries, now professor of chemistry at the University of Kiel, and it is to his ability and untiring efforts that we are indebted for the really representative exhibit shown.

Thirty-nine manufacturers of chemicals, 25 manufacturers of chemical apparatus and 117 individual professors and instructors have contributed toward the exhibit, while many manufacturers of machinery, &c., have freely contributed their most expensive machines and apparatus toward making the display representative of the best in German chemistry.

This exhibit, which is located in block 35 in the northeastern corner of the Palace of Electricity (see ground plan herewith), contains much that will interest chemists and pharmacists,, all of whom are cordially invited to not only visit the

exhibition, but to make themselves known as chemists in order that they may be shown special attention.

The main entrances to this exhibit, which are to the right of the main southeasterly entrance of the Palace of Electricity, lead into a spacious reading room, illustrated below, where the current issues of the various German chemical journals will be found on the tables. Two handsome cases in this room contain a collection of German alchemical works of great historical interest, some dating as far back as 1570, and of German works representing the present condition of chemical science.



Reading Room. Alchemist's Laboratory of the Sixteenth Century. Liebig's Laboratory at Giessen, 1835.
Electro-Chemical Laboratory Table. Double Work Bench for Inorganic Analysis.

VIEWS IN THE GERMAN CHEMICAL EXHIBIT, PALACE OF ELECTRICITY.

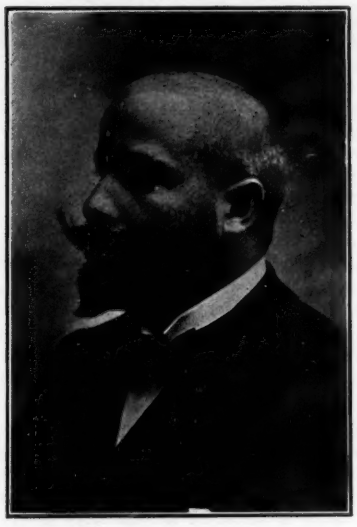
Busts of Liebig, Wöhler, Mitscherlich, Rose, A. W. von Hofmann and of Kekulé, loaned for the occasion by the Chemical Institute of Berlin, the Hofmann House of Berlin and by August Gerber, the sculptor, serve as decorations for the reading room.

HISTORICAL ASPECTS OF THE EXHIBIT.

To the left of this reading room is the laboratory of an alchemist of the sixteenth century, showing the crude alembics and clumsy stills which were used by these forefathers of German chemistry to whom we are indebted for the discovery of the methods of making gunpowder, porcelain, phosphorus and fuming sulphuric acid, and whose studies laid the foundation of our latter-day chemistry. It was with such apparatus as is here shown that Glauber, Böttger, Kunkel and Scheele worked. The pieces of ore shown in the front part of the alchemist's laboratory and in the furnace are from one of the oldest mines in Germany, at Freiburg, Saxony, which we know to have been operated at least as early as the Middle Ages.

LIEBIG'S LABORATORY.

In any exhibit illustrating the development of chemical science the work of Justus von Liebig must have a distinguished place, and it is, therefore, fitting that a reproduction of Liebig's analytical laboratory at Giessen (1835) should form a contrasting picture opposite the laboratory of the alchemist and serve to introduce modern chemistry. It was with the somewhat primitive appliances (some being the originals and



Dr. Otto Zwingenberger.

some replicas) and in the modest laboratory reproduced here that Liebig and his students and fellow-workers laid the foundations for modern technical chemistry. On the walls of this laboratory are shown a very interesting collection of the original organic preparations made by Liebig, Wöhler, Eilhard, Mitscherlich, Hofmann and Kekulé, including the results of the investigations relating to the constitution of benzoic acid and its decomposition products. These exhibits include the original specimens of alloxanthin, creatin, murexid, brucine and atropine prepared by Liebig himself, of synthetic uria prepared by Wöhler, of benzoic acid and half a dozen of its denoitates made by Liebig and Wöhler working jointly, and many other almost equally interesting specimens, a list of which will be found in the catalogue of the exhibit. As great as is the improvement in the character of the apparatus shown here when contrasted with that of the alchemist, close observation will show how much better off is the chemist to-day than were the masters of the early portion of the nineteenth century.

THE ANALYSIS OF GASES.

The remainder of the exhibit is devoted to illustrating the existing conditions in pure and applied chemistry, the first exhibit showing the modern apparatus and methods for the analysis of gas. This exhibit (section iv) embraces the gas burettes of Clemens Winkler and with temperature and barometric connections of Walter Hempel, the calorimeters of Fred Fischer and some new apparatus of Wohl.

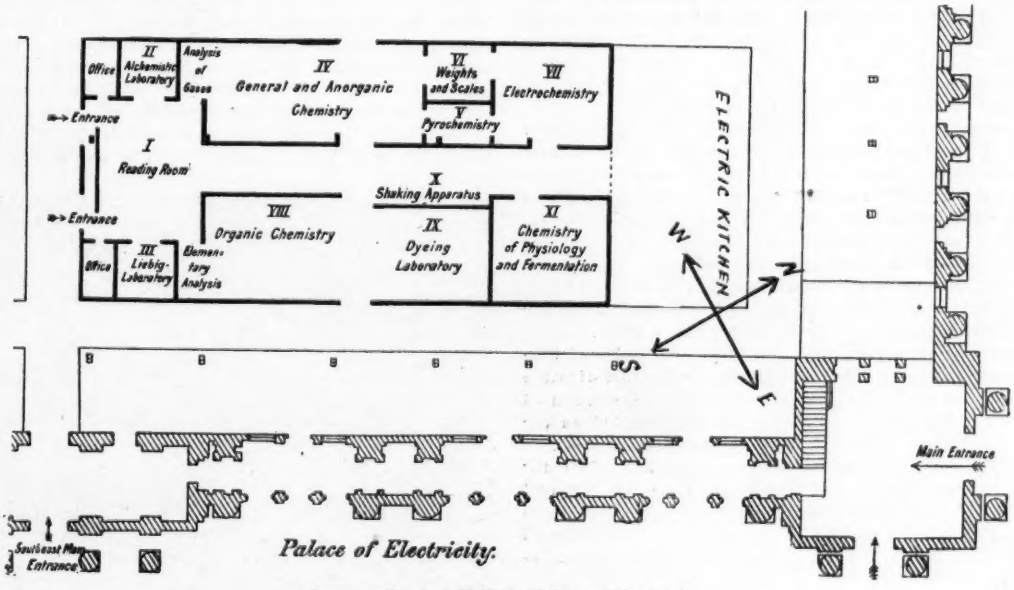
Some very delicate and finely adjusted apparatus is also shown here, by Dr. H. Göckel (cases vii and viii), for measuring the volume of liquius and gases and for the determination of specific gravities.

The double desk for inorganic analysis (see illustration page 162) is a model of the tables in use in the first chemical university laboratory in Berlin. The table is provided with gas and water connections, while one pipe is connected with a vacuum pump. Besides this, there are water suction pumps, too. The reagent stand is divided so as to limit the danger from possible explosion or fire to one side of the table. This desk has an outfit for both qualitative and quantitative analysis. All the apparatus on the desk is exhibited by the Vereinigte Fabriken für Laboratoriumsbedarf of Berlin (Associated Manufacturers of Laboratory Outfits)

The apparatus devised by Dr. Stock of Berlin for working with liquefied gases is also shown here. The historical development of the apparatus for determining the density of vapors according to Victor Meyer is illustrated by a collection here which arouses much interest. Dr. Wallach of Göttingen, Prof. H. Diltz of Kiel and Dr. W. Biltz of Göttingen, made this fine display, which contains much of the original apparatus used by Victor Meyer himself. In close connection with this exhibit is shown the original apparatus of Prof. Pfeffer of Leipzig for the determination of the osmotic pressure and that of Prof. E. Beckmann of Leipzig, for the determination of molecular weight under various conditions. There are further gas burners of an improved construction, by Professor Erdmann of Charlottenburg; a microbalance, by Professor Krust of Göttingen, and electrical furnaces and quartz vessels, by Herræus of Hanau.

THE NEW THERMITE WELDING PROCESS.

The thermite process for welding and casting, devised by



German Chemical Exhibit, Palace of Electricity.

Dr. Hans Goldschmidt, is represented by chemicals and models. A new field is opened in inorganic chemistry by using either very high or very lo temperatures. This field of work is well represented by the electrical furnaces of Borchers, the operations which use liquid ammonia as a solvent, according

to Dr. Stock of Berlin, and the synthesis of certain natural iron hydrates by using high pressure, according to Ruff of Berlin. The wonderful results obtained in the study of contact substances is illustrated by the model of the first sulphuric acid anhydride factory, according to Clemens Winklers, by the contact method, the Royal Saxon Smelting Works near Freiburg in 1879.

Professor Meyerhoffer of Berlin illustrates his studies of the law of the effect of mass and the theory of chemical equilibrium by models and drawings.

An apparatus for spectral analysis, with many improvements, by E. Beckmann, Leipzig, is in operation in the exhibit and will be of great interest to chemists and pharmacists.

An elaborate collection of inorganic preparations includes, besides many technical preparations, some original preparations of germanium, by Clemens Winkler, and a number of new and interesting preparations made by other professors of German institutes.

In the Weighing Room the firm of F. Sartorius of Göttingen exhibits several types of balances used in chemical laboratories. With a load of 200 Gms. they are sensitive to 11-20 milligrammes.

ELECTRO-CHEMISTRY.

The department devoted to electro-chemistry contains the apparatus for electro-chemical work by Kohlrausch and Ostwald. Besides this there are shown exhibits of Prof. Nunst of Göttingen, Elbs of Giessen, Classen of Aschen and Drorde of Giessen. A display of the lecture apparatus for the demonstration of electro-chemical experiments and laws, according to Lüpke of Berlin, is given by Prof. Nunst and the Vereinigte Fabriken für Laboratoriumsbedorf of Berlin, Köhler and Martini and Drs. Peters and Rost of Berlin.

Our knowledge of the properties and effect of ozone has been extended by Professor Harries of Kiel, the general secretary, and we see here a model of the Siemens' ozone apparatus used by him in this department of study. A case with nearly 100 inorganic and organic preparations obtained in an electro-chemical way deserves mention in this connection.

ORGANIC CHEMISTRY.

In the department of organic chemistry we find a similar desk to that shown in the inorganic section (see figure on page 162). On both sides of the desk is electrical apparatus for use in stirring and shaking. The two desks are manufactured by E. A. Lentz of Berlin N. The outfit of apparatus for organic preparation work is from the Vereinigte Fabriken für Laboratoriumsbedorf of Berlin and E. A. Lentz of Berlin.

In the department of organic elementary analysis Professor Dennstedt of Hamburg exhibits a new method, W. C. Heræus of Hanau shows an electrical furnace and P. Altmann of Berlin exhibits a beautiful general furnace. In the double digestion hoods several apparatus for distillation are located.

Prof. E. Fischer and Prof. C. Harries show an apparatus for vacuum distillation under very low pressure, an operation which is very important for both scientific and technical purposes. On the same table there is another collection for the same purpose, devised by Professor Anschütz of Bonn.

Professor Engler of Karlsruhe, and Professor Holde of Berlin, have arranged an exhibit of apparatus for the investigation of petroleum. A fine collection of drying cases, steam-heated funnels, steam superheater, &c., from Vereinigte Fabriken für Laboratoriumsbedorf is located in the cases near the desk.

The photographic developers and coloring materials for three-color photography, dyestuffs for color photography and collodium shown will be interesting to many visitors. Teachers of chemistry may compare the old constitutional models used by Kekulé himself with the new ones devised by Kekulé, Jacobson, Engler, and others.

CLASSIFIED EXHIBIT OF ORGANIC CHEMICALS.

The most interesting part of the exhibit of organic chemistry is the collection of more than 2500 preparations, arranged as nearly as possible according to scientific principles. Beginning with hydrocarbons, the series includes members of both the fatty and aromatic series.

SYNTHETIC CHEMISTRY.

The successes of A. W. von Hofmann in the field of coal tar dyestuffs, the establishment of the formula of benzol by Kekulé, the synthesis of indigo by Engler and of alizarine by Gräbe and Liebermann brought synthetic chemistry to a high plane. The path of research did not stop here, but turned to other problems. The synthesis of sugar by E. Fischer of Berlin, of uric acid, xanthin, theobromine, and caffein by E. Fischer, Robert Behrend of Hanover and William Traube of Berlin brought new successes, completed by the synthesis of terpens, camphors, &c., by Wallach of Göttingen, Bredt of Aachen and Beckmann of Leipzig. The synthesis of the complicated alkaloids of conins by Ladenburg of Breslau, nicotine by Pinner of Berlin, of morphine and theoain by Vongerichten of Jena, Knorr of Jena, Pschorr of Berlin and Freund of Frankfurt-a-M., of quinine by Miller and Rhode, are illustrated by original preparations. These works form pages of glory in the history of German chemistry and excite the greatest admiration for the discovers.

THE CHEMISTRY OF ALBUMEN

is represented by preparations made by E. Fischer, of coloring matters in the blood by preparations of William Küsher and of the digestive juices by preparations of several exhibitors. These physiological preparations and the domonstrations of fermentation are located in an extra section with several apparatus and laboratory tables for fermentation, arranged according to Delbrück of Berlin, and Lindner of Berlin.

Finally we see there some interesting apparatus of Prof. Edward Buchner of Berlin, which he used for experiments confirming the theory that the fermentation of yeast is a purely chemical process.

THE TECHNICAL EXHIBIT.

In addition to the purely educational features of the exhibit there are shown, through the courtesy of the several manufacturers, a complete line of pharmaceutical chemicals, including not only alkaloids, glucosides and neutral principles, but also the various synthetic products, the manufacture of which has been so peculiarly the province of the German chemist.

The Palace of Agriculture.

In the extreme northwestern section of the grounds, situated in a commanding position on the crest of a hill, is located the vast building which houses this exhibit, classed as agricultural. When one bears in mind that this single building covers 21 acres of ground and that the sightseer can walk for 9 miles through its aisles without once traversing his steps, one comes to some realization of the difficulties which confront the person seeking to find in this vast building the comparatively few articles which interest the retail drug trade. The main entrance to the building is from the north, and in ascending the

Citronella Oil Distillery in Center of Field of Citronella, near Point de Galle, Ceylon.

hill on which it is located the visitor has an opportunity to observe close at hand the flora clock, which is one of the wonders of the exhibition; each of the hands of the clock weighs a

PETER DE ABREW,

Commercial Commissioner from Ceylon, in Charge of Ceylonese Exhibit, Agricultural Building.

ton, and the face of the clock has a diameter of 100 feet, being the largest clock dial in existence.

Under the classification of agriculture there is introduced much that at first sight seem scarcely to be agricultural products, but the difficulty of having thoroughly satisfactory and, at the same time, logical classification is borne in upon one when the vast scope, number and variety of the exhibits are seen.

The aisles running lengthwise of the building are given letters, those running crosswise figures; above each of the blocks formed by the intersection of these aisles hangs a block number. In the Japanese Section of the Department of Agriculture there is also shown Japanese peppermint oil and Japanese menthol, both bearing the Government guarantee as to purity.

GROWING GINSENG.

Just opposite the Japanese exhibit, on the main aisle, is an exhibit of living ginseng plants grown in the State of Kentucky by a dealer interested in the sale of the seed. Another ginseng display is made by the Ozark Ginseng Company in the shed just back of the Horticultural Building.

A most complete and well ordered display is made by Ceylon in the central portion of the Agricultural Building, and pharmacists will find that the Commercial Commissioner in charge, Peter De Abrew, is not only well posted regarding the products exhibited, but is most enthusiastic in his efforts to enlarge the field of Ceylonese commerce. The exhibit is admirably arranged, and pharmacists should not fail to present their cards to Mr. De Abrew, who is gentleman of culture, as well as of executive ability.

THE TWENTIETH CENTURY SODA FOUNTAIN.

On Aisle B, Block 89, in the Agricultural Building, the Twentieth Century soda fountain of the L. A. Becker Company, of Chicago, is shown in full blast, and judging from the number of people who avail themselves of the opportunity of quenching their thirst there, the results, so far as the general public is concerned, are entirely satisfactory. The manufacturer extends a cordial invitation to all pharmacists to make themselves known, so that they may be extended every courtesy and given every opportunity to investigate the actual workings of the fountain. In conjunction with this fountain the J. Hungerford Smith Company, of Rochester, makes an exhibit, facing Aisle 11.

Opposite the display of the Twentieth Century fountain is the booth showing Horlick's malted milk. Here, too, the drug-

Display of the L. A. Becker Twentieth Century Fountain. Block No 89, Agricultural Building.

gist will be extended special courtesies on making himself known. This product is so well and favorably known that it is difficult to say anything new of it.

THE BORDEN EXHIBIT.

In Block 66 of the Agricultural Building, which is only a few blocks south of the Becker soda fountain, the Borden's Condensed Milk Company shows Borden's Malted Milk and its old and well-known Eagle Brand Condensed Milk. Besides this it also exhibits Borden's Peerless Brand of Evaporated Cream and other products, which have been long and favorably known to the drug trade. The central feature of the display consists of a pyramid showing the various sized packages of the preparations manufactured by the Borden's Condensed Milk Company. This pyramid, which is 10 feet in hight and about 10 feet in diameter, is incased in plate glass and revolves continuously, so as to show every package to the best advantage. This case is surrounded by a handsome pavilion in white and gold, with counters, at which dainty glasses of ice cold Borden's Malted Milk are dispensed to interested visitors. The attendants at the booth also distribute very pretty little shopping bags bearing the advertisement of the Borden's Condensed Milk Company and handsome lithographed pasteboard fans. Some idea of the popularity of this booth is shown by the fact that some 3,000 fans are distributed daily. It is interesting to observe the number of visitors who, on seeing this exhibit, say with a tone of relief, "Oh, this is Borden's!" as if they were overjoyed to, at last, see something familiar.

The National Association of State Dairy and Food Departments makes an exhibit of adulterated food which is interesting and a little bit suggestive of the special animus of the exhibitors toward the use of alum in baking powders.

On aisle D, Block 73, practically in the center of the Agricultural Building, is located the exhibit of the Liquid Carbonic Company, in the form of a fountain some 40 feet in length, finished in onyx, with Flemish oak trimmings. This fountain is in active operation, the manufacturer believing that no better exhibit could be made than to have the sightseer view the fountain while in operation. Harry C. Rope, in charge of the exhibit, will be pleased to extend the courtesies of the house to pharmaceutical visitors.

The cottonseed products of the American Cotton Oil Company, and the cottolene of N. K. Fairbanks & Co., are demonstrated at Block 75, and the passerby is invited to try specimens of buns, etc., in which these products are used.

The Eskay Food Baby is the most striking and attractive feature of the Eskay Food exhibit in the Agricultural Building. The baby takes protean forms, and varies in age from three months to three years, but the general appearance of being well nourished which is presented in all the photographs indicates that Eskay's Food is quite the proper thing for the baby. However, Eskay's Food is so well known to druggists that the booth, while attractive and interesting, will, to the average pharmacist, afford nothing new.

The California State exhibit, in Section 84, contains a number of specimens of California olive oil and a very handsome display of California wines.

Gleason's fruit juices are dispensed at Booth 87, in the Agricultural Building, and, as is the case wherever any liquid is dispensed on the grounds, the booth is very popular.

Baker's chocolate is shown in a booth in Section 103, where demonstrations are given daily of the best methods of preparing chocolate and dishes containing chocolate.

In Block 107 the Siamese Government shows cardamoms, various kinds of peppers and specimens of teel seed, from which is manufactured an oil which is consumed very largely locally for culinary purposes.

The collective exhibit of the German Agricultural Experiment Stations, located in Block 117 of the Agricultural Building, while not of special pharmaceutical interest, will be of value to any one who cares for analytical chemistry. In the same section is an exhibit of German East Africa which includes several forms of crude rubber, areca and beetle nuts, beeswax, cinnamon, wild vanilla and tamarind fruit. A number of dyestuffs are also shown here, including orchil and arnatto.

The Borden Exhibit, Block 66, Palace of Agriculture.

Carbonell & Co., Cordova, Spain, exhibit at Block 121 Spanish olive oil of guaranteed purity, and show statistics to the effect that this firm alone exported over a million gallons of pure olive oil to Italy last year, and to France over half a million. When it is borne in mind that these figures represent the export of only one Spanish producer of olive oil, it can readily be seen that a very large proportion of the olive oil that reaches us, either pure or adulterated with cotton seed oil, from Italy must come originally from Spain. Spanish oil has never yet been placed on the American market, and this firm has

taken the opportunity of endeavoring to introduce it here, so that the American consumer may be able to save the cost involved by intermediate handling.

Mr. Mandel also has charge of the exhibit of M. Fernanedz, of Xeres, Spain, and shows a number of very fine specimens both of sherry and sherry brandy. Mr. Mandel states that when Lincoln was assassinated Fernandez & Co. set aside 4,000 casks of sherry, which they are now for the first time placing on the American market, under the name of Lincoln sherry. We learn that they have on exhibition authentic specimens of sherry of the vintage of 1709 and of 1809. So far as the editorial palate was concerned the sherry of 1865 was decidedly to be preferred to that of 1709. Mr. Mandel also shows the brandies of Fernando A. De Terry & Co., of Port St. Mary's, Spain.

The Japanese Government conducts several industries through its "Bureau of Monopolies," among these being the manufacture of camphor, of the monopoly of which Japan was made practically secure by the annexation of Formosa, after the Chino-Japanese War. In Block 126, Aisle 14, near the northwestern end of the building, the Japanese Bureau of Monopolies makes a display of crude and refined camphor oil, and of saffron, bearing the label, "Saffron or Sp. G. 1,108 Fermosa and Government, made in Japan," the Government thus guaranteeing the quality of the product.

APOLLINARIS.

In the German Section, Block, 130, Palace of Agriculture, a special booth is maintained by the Apollinaris Company, where the genuine article is dispensed by attendants who are warranted imported.

Forestry, Fish and Game.

Situated in the northwestern section of the grounds, and west of the French Government Building, is the Forestry Building. Entering this building from the northeast, the first object of even remote pharmaceutical interest which presents itself is the exhibit of New York State, in Block 10, where the chemical products of the forest are shown, including acetate of lime, acetic acid, methyl, alcohol, &c.

One of the most important products of New Jersey, the mosquito, is dealt with in a special exhibit in Block No. 19. The visitor is left to determine for himself whether the mosquito is presented as a specimen of New Jersey game or whether it is shown as a fish. At all events, the life history of the mosquito, as it relates to the conveyance of malarial infection, is shown in a very interesting manner.

The Siamese Government makes an exhibit in Block 17 of stick lac and gum, benzoin, gamboge, and also includes what will be of much more interest, a quaint and curious collection of boats, carts, &c.

Ceylon shows a number of models illustrating life in that island. Various producers also show specimens of Arachchi, Kegalle, Kachcheri and Kaju gum. The most interesting feature of this exhibit is the fact that the Ceylon Chamber of Commerce has prepared a collective exhibit of Ceylonese products, including cocoanut palm products, areca nuts, myrobalm, croton seed, citronella oil, vanilla, gingelly oil, Mysore and Malabar cardamoms, cocoanut, gum and oils. A very interesting pamphlet is also distributed in this department, giving a list of drugs indigenous to Ceylon. This pamphlet was prepared by C. Drieberg, B.A., F.H.A.S.

Returning to Aisle 1, pharmacists will find against the northern wall, in Block 28, a collection of crude drugs, shown by the State of North Carolina. This collection, which is accurately labelled, represents every species of drugs which are indigenous to that State. Members of the American Pharmaceutical Association will recognize a portion of this exhibit at least as having been shown at the Asheville meeting of the American Pharmaceutical Association. Proceeding toward the West, the exhibit of Brazil will be found in Block 35. Illustrations of this exhibit appear herewith. Unfortunately the quaint little baskets which are used by the natives for bringing the crude drugs collected by them into the markets are labelled only in the Portugese, and no effort seems to have been made to affix the proper botanical name. These small baskets are hung all around the interior of the booth, but on request the attendant will show the contents to any one particularly interested. Through the kindness of Col. A. F. Aguia we are able to present to our readers a fairly full list of the crude drugs exhibited.

(Written for the American Druggist.)

THE BRAZILIAN CRUDE DRUG DISPLAY.

By F. A. Aguiar.

Commissioner from Brazil to the Louisiana Purchase Exposition.

The Brazilian flora comprises a rich variety of important medicinal plants, whose therapeutical properties, of well-known efficacy, have been used by chemists and pharmacists in the manufacture of an enormous number of medicines and preparations.

The use of medicinal plants in Brazil has been known from time immemorial, particularly to the inhabitants in the interior of the country, where this use prevails generally, on account of an absolute lack of physicians and of pharmaceutical re-

Brazilian Display, Block 35, Palace of Forestry, Fish and Game.—Crude Drugs Shown in Foreground.

sources. In these regions medicinal plants and their different parts are used in various ways, either by infusion, decoction or maceration in water, or the juice or tincture is made with rum or strong alcohol, or in the dry is exhausted by maceration in wine or syrup.

The decoction of plants is commonly used for baths, lotions, etc., and as a febrifuge, emollient, astringent, or tonic internally, &c. The extract form is very seldom used. Experiments have been made in Brazil with the greatest care and accuracy to determine the chemical properties of the many indigenous medicinal plants, their physiological and therapeutical action, which has given rise to the production of a large number of pharmaceutical preparations for which the different parts of the plants have been used.

Not having the intention of presenting a complete classification of the medicinal plants of Brazil, describing the families to which they belong, the history of each one of them, their common name, origin, culture, chemical composition, uses, &c., we will give a short enumeration of some of the most important ones from which Brazilian therapeutists have derived the best results, and which are shown in the Brazilian exhibit.

Capillaria, Adianthum Capillus Veneris, Linn, Maidenhair, Commercial Capillari, Venushair, Avenca.—The leaves are used as an emollient, diaphoretic and pectoral, and also as a remedy in some kidney diseases. This drug is used in the composition of many pharmaceutical products in the form of an infusion, syrup, tincture or extract.

Avenca-Grande, Adiantum Trapeziform, Linn, Avencao.—This plant is of commercial value. It is used as a tonic for the hair, giving it luster and prevents it from falling out.

Avenca De Minas, Cheilantes Radiata, Br.—Used in the form of a syrup and of an infusion as an excellent pectoral.

Samambaia, Pteris Aquilina.—Used in the form of a syrup in acute or chronic pulmonary affections.

Feto Macho, Nephrodicum Filixmas, Rich.—This plant is found in large quantities in the Organs Mountains at Rio De Janeiro. The ethereal extract is a powerful tænifuge.

Sivina, Polypodicum Vaccinifolium, Lang.—Silvina herb, as it is also known—contains an astringent substance very efficacious for the treatment of hemoptysis.

Babosa, Aloe Barbadensis, Mill, Babosa Herb.—The leaves are used as an emolilent and resolvent. The mucilaginous part of the leaves when fresh is used locally to prevent the falling out of the hair. The dry extract is used internally for dyspepsia, chronic disease of the brain, congestion of the liver, hydropsia, &c.

Cipoem, Smilax Papyracea—Poir Para Sarsaparilla.—The roots are used as an anti-syphilitic in syrups, wines, decoctions, alcoholic extracts, &c.

Sarsaparilla of Minas, Smilax Officinalis, Benth.—This plant is well known on account of its efficacy in syphilitic and rheumatic affections.

Japecanga, Smilax Japecanga, Grieseb.—The roots are very useful in cutaneous, rheumatic and syhilitic diseases; it is also an excellent diuretic and has been used with good effect in the treatment of leprosy.

Salsa Matto, Smilax Nitida; Grieseb.—This plant is commonly found in the states of Rio De Janeiro, Espirito Santo and Minas Geraes. The roots and leaves are excellent for the treatment of rheumatism and syphilis.

Salsa Do Campo, Smilax Campestris, Grieseb.—The root of this plant is known as a powerful anti-syphilitic and is commonly used for that purpose.

True Sarsaparilla, Smilax Syphilitica, Humb.—This is an anti-syphilitic of high value.

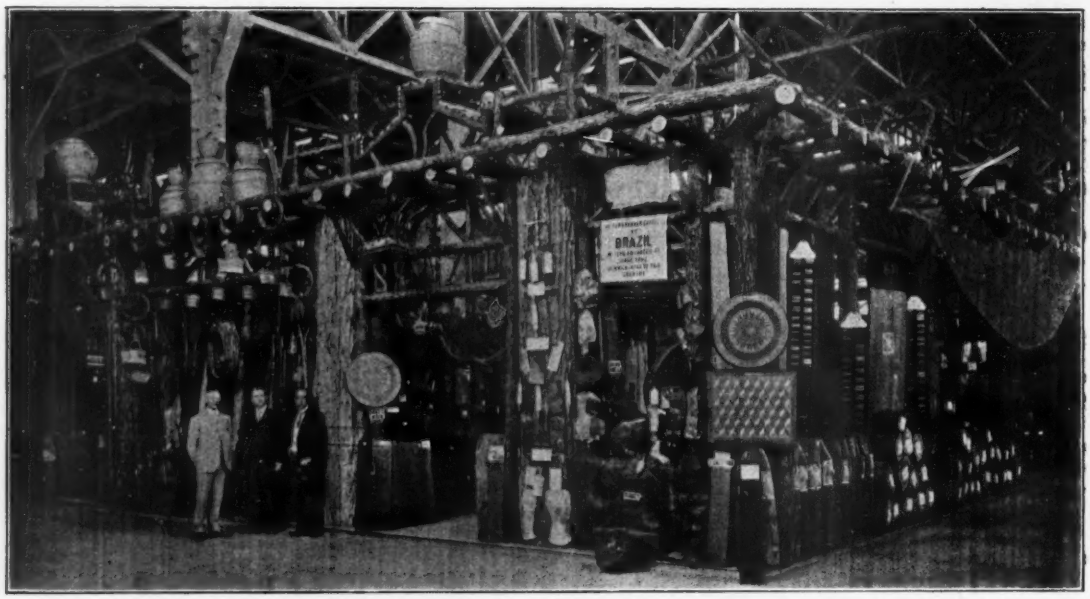
Gilbarbere, Ruscus Aculeatus, Linn.—The root of this plant is used to cure dropsy, icterus, chlorosis, scrofulous affections, &c. It is used in the preparation of a popular syrup known as "Xarope Das Cinco Raises."

Cebola Cecem, Americillis Vita, Ta. Cebola do Matto.—The bulb is known as an emeto-cathartic and is used in the form of a syrup.

Scilla de Terra, Pancratium Gisianense, Ker. Cebola Brava do Para.—The bulb is known as a stimulant, emetic, expectorant and diuretic.

Alho do Matto, Cipura Paludosa, Asbl. Cabolinha do Campo.—The bulbous root, pulverized, is used in the cure of gonorrhœa.

Junquilho do Campo, Lausbergia Juncifolia, Klatt. Junquilho Rhuibarbo do Campo.—In the states of Minas Geraes and Goyaz it is used as a purgative, in powder form or as a decoction.



Brazilian Display, Block 35, Palace of Forestry, Fish and Game.—The Baskets Contain Various Crude Drugs.

Ananaz Brava, Ananaz Sylvestris, Schult. Bromelia Sylvestris.—This is known as an emmenagogue. In small doses it is an efficacious anthelmintic.

Madre Silva, Astroemria Caryophylla, Jacq.—The tincture made from the root of this plant is used as a diuretic.

Gravataassu, Furcroya Cubensis, How. Caraoata Coraquata.—Known as a purgative and diuretic.

Jata, Cocos Jata, J. Mart. Jatahy Cocoa Tree.—Used in a syrup for pulmonary affections.

Patioba, Diplotemium Candesceus, Mart.—A kind of palm tree, the pulverized fruit of which is used as a tonic and as an astringent. Its tincture is also used in the treatment of odontaegia and as an antiscorbutic.

Carnauba, Copernicia Cerifera, Mart. Caranda Carnaiba.—The root of this palm tree is used in the same manner as sarsaparilla in the treatment of cutaneous, arthritic and syphilitic affections.

Imbe San Pedro, Monstera Pertusa, De Vriese. Timbo Manso.—The green leaves are used to cure ascites, the infusion of the roots for dropsy and arthritis, and the extract of the roots is efficacious in cases of poison from snake bite.

Capim Cheiroso, Killingia Odorato, Vahl. Capim Cidreira Cheiro Paraturu.—The leaves and buds emit an agreeable odor and are used as aromatics, anti-spasmodics, diuretics, diaphoretics and sudorifics.

Barba De Boi, Reonirea Maritima, Aubl.—The root, which

is aromatic and has a sour taste. It is used as a sudorific and as an energetic diuretic.

Alecrim da Praia, Oncostylis Arenaria.—This plant is used in pulmonary affections.

Tiririca, Mastigocleria Reflexa.—The decoction made from these seeds is used in the treatment of gravel and calculi in the bladder.

Capim Grama Papalium, Platicaulon, Poiret.—The roots are known to possess diuretic and emollient principles.

Barba De Bode, Aristida Paens, Cavanilles.—This plant is commonly known as an aperient and an emollient.

Capim de Pico, Dactylocterium Micronatum, Wild, Pe De Gallinha Grande, Capim Picao.—Used in the treatment of amenorrhea, nervous diseases, nephritis, &c.

Taquara, Arundinaria Amplissima, Bambu Taquara.—The root is used as an efficacious diuretic.

Gramma, Tritcum Repens, Linn, Gramma das Phartmacias.—An excellent diuretic and a specific for the retention of urine and for calculi in the bladder.

Lyrio Do Brejo, Kedychium Coronarium, Koen, Lyrio, Lagrima de Mocau.—This plant is a powerful stimulant and a valuable tonic.

The Philippines Exhibit.

In the western section of the grounds from Station 7 of the intramural railway, access is had to the exhibit of the Philippine Islands. This exhibit is well worth a visit, containing many features of general interest. The approach to the exhibit is across a stone bridge and through a walled city, which is a reproduction of the walls of the city of Manila. A feature of especial pharmaceutical interest in this exhibit is found in the Forestry Building, where 600 Philippine drugs are displayed. This exhibit reflects great credit upon the industry and skill of Dr. Leon M. Guerro, secretary of the Philippines Commission, who is a native of the Philippines, but who is a botanist of considerable attainments. We are indebted to Dr. Guerro for a list of drugs found in the Philippine Islands, covering several thousand different botanical species. This list is printed as an appendix to the official report of the Philippine Commission, and a copy of it should be in the hands of every medical botanist and pharmacognocist for reference. While Dr. Guerro does not speak English, he is very much interested in pharmaceutical matters, and informs us that he will probably be in attendance at the Kansas City meeting of the American Pharmaceutical Association.

Foreign Government Buildings.

The question of when one should go to any particular part of the Exposition must be determined largely by the point of approach to the grounds; for instance, we have assumed that the visitor enters at the Lindell, or main, entrance. If, however, it so happens that his approach is by way of the Convention entrance, opposite Station 4, on the Intramural Railway, it would be advisable for him to modify the plan proposed regarding the sightseeing by first visiting those points of interest which lie nearest. On entering the grounds at the Convention entrance the visitor should walk up the hill, and the first object of interest which he would see would be the anthropological collection, which is housed in one of the Washington University buildings, on the left. To the right he will find the collection of tributes presented to Queen Victoria at the time of her jubilee celebration. Passing across the court and through the Administration Building, the visitor emerges on the eastern terrace of the Washington University Building, from which an excellent general view is obtained of the foregin buildings, which are grouped along what is known as Administration avenue.

SURGICAL INSTRUMENTS 2000 YEARS OLD.

The first of these on the right is the Italian Government Building, the internal decorations of which are composed of replicas of celebrated Italian works of art. The pharmacist and physician interested will find against the eastern wall of the main hall of the building a collection representing surgical instruments taken from the excavations of Pompeii, among which are included a four-valve vaginal speculum, a bistoury and a canula tenaculum. These instruments vary but little in form, and not all in principle, from those now in use. It is really startling to observe how closely we have adhered to the models of the Romans in the forms taken by these instruments.

THE BELGIAN GOVERNMENT BUILDING.

is unique in having external frescoes, painted in vivid colors, representing scenes in Belgium. Though this is a small country, it is a most active one from a commercial point of view, and the exhibits of its manufacturers and merchants are massed in the Government Building, with the result that the effect is very much better than it would have been had the small number of exhibits shown been distributed through the different buildings, according to their subject classification. Toward the rear of the building and to the right is an alcove devoted particularly to pharmaceutical and allied products, and here the readers of the AMERICAN DRUGGIST will find a familiar object in the excellent photograph of the house of Charles Delacre & Co., which was reproduced some months ago in these columns in connection with a description of the business of that enterprising concern. An album is exhibited containing photographs of the various departments of the Delacre Company's establishment, together with a prominent notice to the effect that the firm is desirous of arranging to introduce American products into Belgium, and to take over the agency for such products. Van de Broeck & Co. of Brussels exhibit thermogene, Eckelaer shows his artistically put up soaps and perfumes and Pelhaizi Brothers & Co. of Brussels present an imposing array of statistics concerning their 19 factories, their 565 branches and their 4300 employees engaged in the manufacture of corks.

Just without the central court of this building will be found an interesting though somewhat limited display from the Congo Free State, including, besides crude native weapons, &c., numerous specimens of crude rubber, copal and rosin.

The Exposition Drug Store.

H. C. Brenner, who has two stores in St. Louis, conducts the official World's Fair drug store on the model street. The store building is 170 feet long and 50 feet wide, and contains 160 feet of drug store fixtures, 15 feet of prescription counter, keeps eleven employees busy the whole day, and carries a most varied stock, for, as is naturally to be expected, the clientele being drawn from all over the world, Mr. Brenner has to deal with a most cosmopolitan collection of orders. Fortunately, he has no cut rate problem to deal with, in fact, has to charge a slight premium on the regular prices, owing to the fact that he has to pay a percentage on his gross receipts to the exposition authorities. Just think of $1.15 for Hood's Sarsaparilla or Peruna!

The Welch Grape Juice Company.

The Welch Grape Juice Company's main sales and headquarters building is located on the prominent corner of the "Pike," and was ready for business opening day. It is a two-story structure, the architecture being in harmony with the Exposition buildings, size 50 x 20 feet. Then scattered throughout the grounds and buildings are attractive booths where this delicious product is being served, and it would seem that the Welch Grape Juice Company will accomplish its purpose to make Welch's Grape Juice so prominent that any one attending the Fair cannot fail to at least see the name. The concession is in charge of A. L. Wolcott, who represents Welch's Grape Juice in the Philadelphia territory, and who has attended so many of the national and State meetings of the druggists' associations in the interests of his company.

The Vermont Association.

The Vermont Pharmaceutical Association will hold its annual meeting in Burlington Tuesday and Wednesday, October 11 and 12. Members from all parts of the State are expected to be in attendance. F. C. Herrington and C. C. Miller of the Burlington Drug Company, the local secretaries, are making elaborate arrangements for the meeting and for a number of social events for the entertainment of the members and ladies.

SCORES POINT AGAINST N. A. R. D.

Association Declared in Contempt and Fined $2,000—Secretary Wooten Fined Separately in $500—Five Wholesalers Involved are Given Time.

(By telegraph from our Regular Correspondent.)

Chicago, September 1.—Isaac Platt, a retail druggist at 809 Ashland avenue, has won a point in his fight with the N. A. R. D. Judge Dunne decided yesterday that the National Association was in contempt and must pay a fine of $2,000. He also assessed a fine of $500 against Secretary Thomas V. Wooten. Five wholesalers, the principal representatives of that branch of the trade in Chicago, who are also charged with contempt, are given until the fall term of court of make explanation.

POINT AT ISSUE LARGELY TECHNICAL.

It should be borne in mind that the point at issue is largely technical. A temporary injunction was granted to Platt in 1902. Such writs usually come up for argument within a short time and it is then decided whether or not they shall be made permanent. The writ secured by Platt never came up for final argument, but until that decision is rendered it is, of course, in effect. The ruling yesterday was entirely on the point of whether or not there had been a violation of this temporary injunction.

N. A. R. D. GIVES NOTICE OF APPEAL.

The N. A. R. D. will appeal the case, notice to that effect having been duly given, and will carry on the fight.

TESTIMONY THAT CONVINCED JUDGE DUNNE.

Officials of the N. A. R. D. say that the decision was rendered on the testimony of Cornelius Van Schaack, who was flatly contradicted by three other witnesses. It is charged that it was the wholesalers themselves who "blacklisted" Platt, because he was at the head of the American Drug Company, which purchased goods in large quantities, or tried to, in order to sell again to retailers, and thus cut into the jobbers' business. It is claimed that Platt's customers were cutters, and that the trouble, following complaints by other retailers, caused the wholesalers to act on their own initiative.

Judge Dunne is also alleged to have indulged in "gallery play" in attacking the "wicked trust." In rendering his decision, he said:

"That Platt has been deprived of the right in this community to sell goods nothing can be more clear. It is a combination which has prevented him from securing supplies. It may not have come within the limits of the Anti-Trust law, but the fact remains that the courts enjoined the defendants from carrying out the scheme, which would prevent him from securing goods.

IMPRESSED BY WOOTEN'S TESTIMONY.

"Wooten testified that the organization was formed for the purpose of maintaining the prices of drugs in the retail stores. He told of many laudable objects of the organization, and I have no doubt that it is composed of good citizens, who have united together as a method to prevent the cutting of prices and to protect themselves in this way. Of course, they have a right to guard their interests; but the public, on the other hand, has a right, also, to protect itself. In pursuance of this design the association adopted a certain contract, the effect of which is to make the jobber simply the distributing agent, who has simply paid the full value of the goods to distribute them only to certain people, and not to Platt and druggists in his class. The effect of that contract, in other words, is to prevent that man from buying goods. The ordinary wholesaler is anxious to sell goods. If the man goes to a wholesaler with the money in his hand, ordinarily he will get his goods. There must be some reason for a unanimous refusal, as in this case. I would call it a malicious violation, for intelligent men have disobeyed the court order for trade purposes. The acts of the organization and Wooten have had the effect of preventing Platt from securing goods, and I consider it a violation of the letter and spirit of the injunction."

It was charged in court that the association several times asked Platt to give up his fight and join the association.

DISCRIMINATION IN RAILROAD RATES.

Sharp & Dohme Fail to Get the New York Board of Trade to Make a Fight in Their Interest.

About a dozen representatives of large jobbing and manufacturing interests attended a special meeting called by the Drug Trade Section of the Board of Trade, on August 31, to consider what action, if any, should be taken toward pressing charges of freight rate discrimination against some of the largest railroad systems. The matter was brought to the attention of the Section by Sharp & Dohme of New York and Baltimore, who complained to the Interstate Commerce Commission that the railroads were carrying drugs, chemicals, medicines, dyestuffs, &c., to Colorado and Utah points at rates which exceed those charged by the same roads on the same class of merchandise to Pacific coast points. This is claimed to be in direct violation of Section 4 of the Interstate Commerce Act.

RAILROADS COMPLAINED OF.

The railroads against which the complaint is made are the Baltimore & Ohio Railroad Company, the Pennsylvania Railroad Company, the Pittsburgh, Cincinnati, Chicago & St. Louis Railway Company; the Chicago, Burlington & Quincy Railway Company; the Chicago & Northwestern Railway Company, the Chicago, Milwaukee & St. Paul Railway Company; the Atchison, Topeka & Sante Fé Railway Company; the Denver & Rio Grande Railroad Company, the Rio Grande Western Railway Company, the Southern Pacific Company, the Union Pacific Railroad Company and the Wabash Railroad Company.

THE FORMAL COMPLAINT

deals with traffic from Baltimore, the headquarters of Sharp & Dohme, and, among other things, gives the following as the rates in cents per 100 pounds from that city to the points named:

	L. C. L.	C. L.
Denver, Col., and Colorado common points....	264	240
Salt Lake City, Utah, and Utah common points	342½	342½
San Francisco, Cal., and Pacific coast points..	190	140

The complaint then continues:

"The foregoing rates from Baltimore to Salt Lake City and Utah common points and to San Francisco and Pacific coast points are published through commodity rates, but from Baltimore to Denver and Colorado common points the rates are made up of a combination based on the Mississippi River.

"The rates established by defendants for the transportation of drugs, medicines and other articles from Baltimore to Denver and Colorado common points and to Salt Lake City and Utah common points are unreasonable and unjust generally and relatively as compared with such rates from Baltimore to San Francisco and Pacific coast points, in violation of Section 1 of the Act to Regulate Commerce; said rates subject complainant and other manufacturers and shippers of such articles in the city of Baltimore and druggists and dealers in Colorado and Utah to unjust discrimination and undue and unreasonable prejudice and disadvantage, and constitute unjust discrimination in favor of and give undue and unreasonable preference and advantage to the city of San Francisco and other Pacific coast points, and druggists and dealers thereat, in violation of the second and third sections of the Act to Regulate Commerce; and said rates constitute greater compensation in the aggregate for the transportation of like kind of property under substantially similar circumstances and conditions for the shorter distances to Denver and Salt Lake City than for the longer distance over the same line, in the same direction, to San Francisco and other Pacific coast points, the shorter being included within the longer distance, in violation of Section 4 of said Act to Regulate Commerce."

The meeting last Wednesday was called to see what action New York interests should take to supplement the complaint made by Sharp & Dohme.

MR. BOYDEN OPPOSES THE MOVEMENT.

The principal speaker was W. S. Boyden of Rosengarten & Son, who was formerly engaged in the railroad business. He

threw cold water, so to speak, on the whole proceeding, and advised those present to drop the matter. He called attention to the fact that this same subject had already been thrashed out in the courts and that the latter, and even the Supreme Court, had sustained the railroads. He stated that it had been held by the courts that where other elements aside from competing railroad lines were a factor to be considered in the carrying of freight, the conditions governing the long and short haul clauses of the Interstate Commerce Act did not apply; that in the present case the roads carrying freight to the Pacific coast have water routes to compete with, and were therefore compelled to charge a lower rate to the coast than competition made it necessary to do to less distant points.

He added that drug interests in Colorado and Utah long ago took this same matter up and made every effort to have the rates reduced, but without avail, as the courts in every case sustained the railroads.

REFERRED TO THE GENERAL BOARD.

After some further discussion it was decided, on motion by John M. Peters, to refer the matter to the General Board for its consideration. In other words, the New York interests represented at the meeting will not, as a body at least, support the complaint made by Sharp & Dohme. The matter was to come before the Interstate Commission at a hearing in Denver on September 10, but whether it will or not is now doubtful.

NEW YORK STATE ASSOCIATION METHODS CRITICISED.

The Delegate of the New York Central Drug Association Frees His Mind and the Association Indorses His Views by Asking the "American Druggist" to Print His Report.

To the Editor:

Sir,—At a recent meeting of the Central Drug Association, Utica, N. Y., at which a report of the proceedings of the State Pharmaceutical Association was read by Mr. George Ballard, delegate, resolutions were adopted requesting the secretary to write asking that space might be given for the printing of said report in your journal. I, therefore, in accordance with the adopted resolutions, ask that you kindly give space in your next issue, or as soon thereafter as possible.

We deem this report will be of interest to many of your readers. WILLARD H. ROBERTS,
Secretary New York Central Drug Association.

UTICA, N. Y., August 27, 1904.

To the President of the New York Central Drug Association:

DEAR SIR.—As your representative to the New York State Pharmaceutical Convention at Brighton Beach, June 27 to July 1, I beg leave to submit the following report:

Owing to business engagements, I missed the first day's session of the convention, but the first day is usually given to handshaking, patting each other on the back, taffy throwing and getting acquainted; therefore I missed very little, from a business standpoint.

As your representative I was present at every session after the first day. The convention, as a social meeting, was a great success. Every one had a good time and seemed pleased, as they were royally entertained, but as a meeting of any importance in any way or as a help to the drug business I failed to see it.

Mr. Dawson, of Syracuse, read a paper on insurance, which, if taken up, might be of some importance to the drug trade. I intended to speak on the subject, but as no one else made any remarks and no particular interest was shown in regard to it, I hesitated to speak on the subject, thinking it would come up at a later session.

Mr. Todd, of Ithaca, read a good paper on trade interests in general. He spent a great deal of time and trouble on the paper, and it might have been discussed to mutual advantage, but, if I remember correctly, he did not get even a vote of thanks for the time and trouble of getting up the well-written report.

If there were more reports like those of Messrs. Dawson and Todd and they were discussed, it might be of some benefit to the drug trade. There were some scientific papers read and discussed. One in particular I will mention: it was on the specific gravity of iodoform and took up nearly the whole of one morning's session, yet to the general drug trade it would not add a single penny to their profits during the year. The question whether the specific gravity of iodoform is 4, 2 or 1¾ makes no difference, as it is an article you would not make in your store under any circumstances, if it could be avoided. Most of us recall the greeting we receive on going home after weighing out iodoform: "There, you have been putting up that horrid stuff again." We are all willing that it be made by some chemical house and outside of the city limits, if possible.

The convention as it now is seems to be run mostly in the interests of the colleges. The law passed last winter and known as the Prerequisite law is wholly against the interest of the drug trade (at least, the drug trade outside of New York and Brooklyn). I cannot speak of those two cities and their needs, as I know nothing about them. The law should be amended so that all drug clerks outside of those two cities could be allowed to pass the State Board without going to any college. It would be to the advantage of the drug trade and also boys who cannot afford to go through college. But who are to blame for the passage of this law? The druggists themselves. They let a lot of members who are working in the interest of these colleges pass the resolution in our convention, then do not oppose the law when it comes up for final passage. Now, my remedy is this: Pass a resolution at the next convention that no one is to have a vote unless actively engaged in the drug trade; secondly, have all up-State associations appoint one delegate. Let these delegates meet in some appointed place one month before the annual meeting of the State meeting, exchange ideas, formulate plans, decided on what we want, select who shall offer any resolutions that may be needed, and attend each business session.

While not criticising any member who went from Utica (and I believe there were nine), I venture to say only two voted when the contest for the secretaryship came up. If things continue the same as now, I don't see any earthly reason why any member of our own local association should remain a member of the N. Y. S. P. A. for any benefits derived. However, it is up to our local association, and that is where I leave it. Respectfully submitted. GEO. S. BALLARD.

New York Trading Stamp Law Unconstitutional.

Supreme Court Justice Edwin A. Nash, of the Seventh Judicial District, New York, has declared unconstitutional the law passed by the New York State Legislature at its last session regulating the issue of trading stamps and attaching a penalty for violating the act. In rendering an opinion the Justice declared that it is the settled law of this State that it is not within the power of the Legislature to suppress or regulate the issue or sale of trading stamps. The opinion was rendered in the case of Edward Appel, a cigar dealer who was arrested for selling a cigar and a package of tobacco, accompanied by tobacco coupons, which did not have a redeemable cash value printed upon their face as required by the Trading Stamp law.

Alabama Board Registers Candidates.

At a meeting of the Alabama Board of Pharmacy, held in Montgomery, July 20 to 24, the following candidates passed: H. S. Smith, Birmingham; W. A. Walters, Troy; J. M. Wilson, Jr., Grove Hill; J. Kimbal, Jackson; B. M. Bingham, Tuscaloosa; J. C. Morris, Avondale; Carl Wharton, Gadsden; James Read, Clayton; Robert K. Martin and David Letaw, Birmingham; R. H. Williams, Mobile.

The next meeting of the board will be held in Birmingham, October 20 to 24. P. C. Candidus was appointed to represent the board at the conference in Kansas City this month.

William Mair, F. C. S.

We have pleasure in presenting to our readers a portrait of William Mair, F.C.S., who is visiting the United States in connection with the annual general meeting of the Society of Chemical Industry, which opens in New York this week under the presidency of Sir William Ramsay, continuing with a tour embracing Philadelphia, Washington, Pittsburgh, St. Louis, Chicago, Detroit, Niagara Falls and Boston, about a hundred members from Europe joining the party. An old and valued friend, our acquaintance with Mr. Mair dates back many years, and his name will be familiar to many of our readers as a valued contributor to the old *Pharmaceutical Record*, as well as to the consolidated journal.

Mr. Mair is connected with the firm of Fletcher, Fletcher & Co., Limited, manufacturing chemists, Holloway, London, N., on the commercial and administrative side. This firm manufactures a line of fine pharmaceutical products—"Fletcher's Concentrated Liquors," for the production of standardized tinctures, and other preparations of the British Pharmacopœia. The history of this firm is just about concurrent with that of standardization as applied to galenicals, and Fletcher, Fletcher & Co. are the undoubted precursors of the adoption of this principle in the 1898 edition of the British Pharmacopœia.

WILLIAM MAIR, F. C. S.

A Scotsman and a pharmacist, one of his earliest efforts was the compilation of a Pharmacopœia of the Dundee Royal Infirmary, which is still in use there. While at the infirmary Mr. Mair taught practical materia medica and pharmacy to the medical students of University College, Dundee, his course being recognized by the University of Edinburgh as qualifying for graduation there.

Four years' subsequent splendid experience in India in the notable pharmacy of Smith, Stanistreet & Co., Calcutta, afforded also the opportunity for a thorough study of the copious materia medica of that wonderful country, resulting in the publication, in 1896, of "The Indigenous Drugs of India," in collaboration with the Rai Bahadur Dr. Kanai Lall Dey, a great native authority on the subject.

During this period numerous papers from Mr. Mair's pen appeared in the AMERICAN DRUGGIST and in *The Chemist and Druggist*, of London, on Indian subjects. Since then complete absorption in successful business pursuits has precluded all such effort, excepting a paper to the British Pharmaceutical Conference at the London meeting, entitled Notes on Some Indian Drugs, and a lecture to the Pharmaceutical Society at Edinburgh, illustrating the growth and preparation of Cannabis Indica.

Although Mr. Mair has found his metier in the empire of business rather than in the pleasant paths of pure science, he is still a keen student of pharmacology. It is his intention during his stay in the United States to make a study of business administration and organization and also pharmaceutical education and ethics as interpreted on this side of the Atlantic.

Besides being a member of the Pharmaceutical Society of Great Britain and the Society of Chemical Industry, Mr. Mair is also a fellow of the British Chemical Society. His literary tastes are indicated by his membership in the Ex Libris Society, which is limited to 500 members.

LONDON LETTER.

Agitating for Duty-Free Alcohol—The Protagonist of the Movement—Workings of the Law Pertaining to the Sale of Poisons—The Federation of Local Pharmaceutical Associations.

(From our Regular Correspondent.)

LONDON, August 20.—A grievance from which the British chemical manufacturer has suffered for many years and which has recently become more acute is the refusal of the Government to grant him the use of duty-free alcohol for manufacturing purposes. This handicapping of an important industry is apparently not unknown in America, but in Great Britain a resolute campaign has been started during the past year against the continued imposition of duty. It is pointed out that the manufacturer of many fine chemicals has not the slightest chance of competing in the markets of the world with his prototype in Germany. The latter is nursed by a beneficient Government, which provides him with untaxed alcohol for the manufacture of his products; consequently Germany is in a much better position to supply cheaply various chemicals than any other manufacturing country. The agitation, which has always been simmering on the surface of the sea of chemical industry, has apparently boiled over in recent months and (greatly through the skilful stoking of Thomas Tyrer) it has scalded the hoofs of Government itself.

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The protagonist of the movement, Thomas Tyrer, is a London chemical manufacturer of much eloquence, energy and persistence. He is not only a practical manufacturer of chemicals, but is a scientist of repute. Pharmacists throughout the country know and like the genial Tyrer, who is almost as renowned for his private metaphysical disquisitions as for his public contributions to pharmaceutical chemistry. He is a leading light in the councils of the Chemical Society, the Society of Chemical Industry and the British Pharmaceutical Conference. He is at present engaged working, in conjunction with Sir William Ramsay, on the sources of radium, and gave an interesting account of his experiences in that connection at the British Pharmaceutical Conference meeting at Sheffield. Mr. Tyrer has made the subject of "duty-free alcohol" all his own. He has read papers on the subject at the Society of Chemical Industry and at the Society of Arts, and has led off discussions on the question at meetings of that pretentious body—the London Chamber of Commerce. Public persistence has been supplemented by private enthusiasm, with the result that many members of Parliament have been so interested that an animated debate was instituted in the House of Commons last month, the outcome of which was that the Chancellor of Exchequer promised to appoint a committee to go into the matter. Mr. Tyrer is a past president of the Society of Chemical Industry, and will be in New York with the society in September. Doubtless he will meet many American manufacturers who will sympathize with his aims and aspirations on this and many another subject.

* * * * *

The "Tabloid" case has been twice before the courts since the decision in the appeal. The defendants intimated an appeal against the injunction restraining them from passing off their goods as "tabloids," and last month counsel for the defendants applied to the Court of Appeal to postpone the hearing, stating that the case for striking the mark off the Register is being carried to the House of Lords. The Court of Appeal refused leave to postpone the hearing and it came up in due course a fortnight later. On the case being called, counsel for Burroughs Wellcome & Co. intimated that the appellants did

not intend to prosecute the appeal and it was dismissed with costs. The next stage will be in the House of Lords and the outcome of the proceedings there will settle the question finally.

* * * * *

An important prosecution was instituted by the Pharmaceutical Society a week or two ago. The society summoned a limited company trading as ironmongers in London for selling an insecticide composed of nicotine. Nicotine being "a poisonous vegetable alkaloid," comes under Part I of the poison schedules in the Pharmacy Acts (see AMERICAN DRUGGIST, July 11, page 3). The company were charged with selling the insecticide without labelling it "poison," with selling it to some one unknown to the seller and without making the statutory entry in the poisons book. The attorney for the defence contended that the Pharmacy Act was only intended to apply to poisons sold for medicinal purposes, and, further, that a limited company could not be held liable for such offences. The Lord Mayor of London, who was on the Bench, decided in favor of the society on all counts and fined the company £5 and 5 guineas costs on one charge and nominal fines of 1 shilling each on the other charges.

* * * * *

This promises to be one of a series of like prosecutions. In another case, to be heard shortly, the society is prosecuting the actual manufacturer of the insecticide, and probably the whole question of the sale of poisonous sheep dips, insecticides and weed-killers will be again brought into prominence. The wholesalers and manufacturers of such articles would like to have it held that these "agricultural necessities," as they call them, are outside the poison regulations entirely. A society with a title of Teutonic length has been formed to protect the interests of these traders in poisons, and last year they demonstrated that they had various good friends in Parliament. So influential did they prove that a departmental committee was appointed to hear evidence on all sides regarding the matters at issue. Pharmacy was represented in the committee by William Martindale for part of the time and later by Walter Hills. As a result of the committee's deliberations a majority report was drawn up, urging a greater freedom in the sale of agricultural commodities containing poisons and—as a set-off, probably—advising the addition of one or two other poisons to the Pharmacy Act schedules.

* * * * *

The findings of the committee were, of course, strongly condemned by all pharmacists, as well as by the medical profession and coroners all over the country. Any weakening of the present lax enough restrictions regarding the sale of poisons was held out as a distinct menace to the safety of the public, and a dignified minority report, drawn up by Walter Hills, was universally commended. But the unqualified vendors of poison undoubtedly scored, and it has been rumored persistently since the report was issued that the Government intends bringing in a bill embodying the recommendations of the majority of the committee. Meanwhile, the Pharmaceutical Society is taking the bold course (Glyn-Jones is chairman of the Law Committee) and the downtrodden poison-monger (limited) knows not where to plant his kegs.

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The observant outsider has noted that anything sneered at by society officialdom is generally for the benefit of the bulk of the trade. Thus when *The Pharmaceutical Journal* came out with a covert attack on the "Federation of Local Pharmaceutical Associations" the other day, one felt that the Federation was doing good work. The Federation was started some ten years ago with the object of amalgamating the various chemists' associations throughout the country and getting interchanges of views and ideas on practical and political questions affecting the welfare of the trade generally. It has gone on increasing in power and popularity, until now it embraces all the associations worth having in the trade. The Federation meets annually on the day following the close of the British Pharmaceutical Conference, and this year at Sheffield keen, alert, live pharmacists from all parts of the country discussed James F. Tocher's scheme of territorial representation for election to the Pharmaceutical Council, a newly-passed bill dealing with the early closing of shops, the question of state-aided pharmaceutical education and various points connected with proprietaries and the Inland Revenue. Much could be written about the "territorial representation" scheme and its author, but this must be left for a future "letter." The president of the Federation is William L. Currie, a Glasgow pharmacist, recently elected to the Pharmaceutical Council, and the secretary is William Watson-Will, principal of a popular school of pharmacy in London, and an able teacher and pharmacist.

THE NEW PHARMACOPOEIA.

Contract for Printing Awarded—The Regulation Governing Appointment of Sub-Agents—Price at Which the Work Will Be Sold.

The Board of Trustees has awarded the J. B. Lippincott Company, of Philadelphia, the contract for printing the 1900 edition of the United States Pharmacopœia. Bids are now being taken for the agency for the sale and general distribution of the book. The contract will be awarded early in September. In addition to an agency such as was established for the previous edition, the Board of Trustees has decided upon providing for sub-agents. The following are the conditions controlling the sub-agents :

The agent shall be required to appoint four sub-agents who are in the book-selling business, one each in the cities of New York, St. Louis, Chicago and San Francisco, which sub-agents shall keep on hand a sufficient stock of Pharmacopœias to fill all orders that may come to them, and shall account to the agent for sales made and for stock on hand, under such regulations as the agent may direct. The agent shall be responsible to the Board of Trustees for all books sold to sub-agents, but books in the hands of sub-agents shall be counted as books in stock in the hands of the agent at the time of making quarterly settlements with the Board of Trustees.

The agent may make such business arrangements with the sub-agents as he may deem proper to advance the sale of the Pharmacopœia, but no contract with any sub-agent shall be in conflict with the provisions of the contract between the agent and the Board of Trustees.

All blanks and the receiving of bids for an agency is in the hands of a special committee consisting of Charles E. Dohme, Baltimore; Prof. J. P. Remington, Philadelphia; Dr. J. H. Beal, Scio, Ohio.

PRICE OF THE NEW PHARMACOPOEIA.

The Board of Trustees has decided to place the revised Pharmacopœia on the market in at least six styles. The prices will be as follows : Bound in muslin, $2.50; sheep, $3; flexible leather, $3.50; interleaved, sheep, $4; printed on one side, sheep, $4; printed on one side, unbound, $3.50.

The date on which the new revision of the Pharmacopœia will become the law and guide will be fixed as near as practicable to 90 days after the first publication of the book.

THE U. S. P. IN SPANISH.

A letter from Prof. Jose G. Diaz of the University of Havana was read at the last meeting of the Board of Trustees, making a proposition with reference to issuing a Spanish edition of the Pharmacopœia. The board referred the matter to the president of the convention, Dr. H. C. Wood, with the request that he procure the necessary information and report upon the same to the board. President Wood has since had a conference with the government authorities at Washington and is in correspondence with the insular government authorities at Manila, P. I. It is desirable to first of all determine the extent to which the Spanish edition is likely to be used.

The Board of Trustees will hold an informal meeting at Kansas City during the week of the A. Ph. A. Convention, September 5-10.

PLASTER MANUFACTURERS AT WAR.

Combine Definitely Disrupted and Prices are Being Ruthlessly Slashed—Some Manufacturers Deny Participation But Express Surprise at the Openness With Which the War is Being Carried on by Others.

Definite confirmation was obtained last week from most reliable sources that the so-called plaster combine has at last been disrupted and that an ugly price-cutting war has been on for several weeks past. Just when the break in the agreement among leading manufacturers took place cannot be stated positively. Statements on that point made by leading interests vary. Some declare that there has been no price agreement for at least a year; others say that the disruption was of more recent date. However, the agreement, or "understanding," as some are pleased to term it, is now a thing of the past. It seems to be a case of "every one for himself and the devil take the hindmost," as one manufacturer put it.

As stated in the preceding issue of the AMERICAN DRUGGIST, a number of firms a few years ago entered into an agreement to maintain prices on plasters. These firms were parties to the compact: Johnson & Johnson of New Brunswick, N. J.; Seabury & Johnson of East Orange, N. J.; the J. Ellwood Lee Company of Conshohocken, Pa., and Bauer & Black of Chicago. Several months ago there were persistent rumors of trouble among these concerns as to the maintenance of prices, but little in the way of definite information could then be drawn from parties directly involved.

The present rate war, according to statements made the other day, started last month when the J. Ellwood Lee Company, it is understood, sent a circular to jobbers, followed by a similar notice to retailers, offering a material reduction in prices on the firm's goods. Not long after this action on the part of the Lee company Bauer & Black, it is said, issued a circular meeting the cut made by the Lee firm. But, for some reason or other, the same people who had received that notice from Bauer & Black got another circular a little while afterward cancelling the reduction originally offered and substantially reducing the concession then made. Since that time the price-cutting has been going merrily on, though just to what extent is hard to learn, for parties most concerned are very reticent. Some idea of the situation, however, may be had from the statement made by a responsible party that one firm has actually been underbidding itself for fear that rival manufacturers would get the business. This particular firm offered 33 1-3 off, but the prospective buyer didn't jump at the offer at once. A few days later the same firm, believing one of its competitors had put in a lower bid (although such was not the case), increased its concession by offering 50 off.

Some of the manufacturers, such as Seabury & Johnson and Johnson & Johnson, deny that they are participating in the rate war, but admit that the agreement no longer exists.

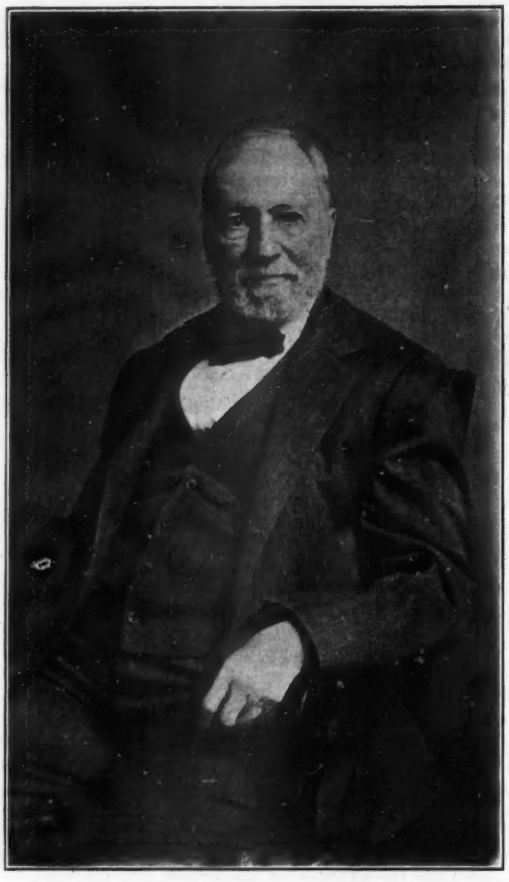
George J. Seabury said to a representative of the AMERICAN DRUGGIST: "We are not in it. Some of these outside interests have seen fit to cut prices and demoralize the trade, but we are not mixed up in the trouble and will not be. We have a policy of our own and intend to pursue it. We have no dirty linen to wash."

A representative of Johnson & Johnson said that the agreement had not existed for a year past. He said that his firm had not met the cuts made by the Lee company and Bauer & Black, and did not intend to. He saw no reason why Johnson & Johnson should cut prices. "We cannot afford to lower the standard and reputation of our goods by any such poor business policy," said he.

Surprise is expressed among some plaster manufacturing interests that their rivals should so openly throw down the gauntlet and circularize the trade to get business at cut rates. "A shrewder policy," said a manufacturer, "would have been to go about it quietly and offer concessions to individual buyers, without letting every one know about it."

Such a statement from a prominent manufacturer is rather significant, to say the least, especially since it comes from one who professes not to be "in the war."

Obituary.



WILLIAM WEIGHTMAN.

William Weightman, the head of the firm of Powers & Weightman, manufacturing chemists, Philadelphia, died at his summer home, "Raven Hill," in West School Lane, Falls of Schuylkill, Pa., on August 25, at the age of 91.

Mr. Weightman was born in Grimsby, England, September 30, 1813. In early youth he left England, at the suggestion of his uncle, John Farr, who made a place for him in the chemical laboratories which he had founded in Philadelphia a few years previously. On January 1, 1838, John Farr associated with him in the business Thomas H. Powers and his nephew, William Weightman, under the firm name of Farr, Powers & Weightman. After the decease of Mr. Farr in 1847 the firm name was changed to that which has become so universally known in connection with the production of quinine, as Powers & Weightman.

Mr. Powers died November 20, 1878, and on January 1, 1879, William Weightman succeeded to the business alone, and so continued for some years, until he associated with him his two sons, John Farr Weightman and William Weightman, jr., which copartnership lasted until their respective deaths, when William Weightman continued the business alone under the same firm name until January 1, 1893, when he admitted to an interest in the business his son-in-law, Hon. R. J. C. Walker, who died in December, 1903, and on January 1, 1904, Mrs. Anne M. Walker, his widow, and Mr. Weightman's only remaining child, was admitted to the firm and is now the only surviving member of the firm of Powers & Weightman.

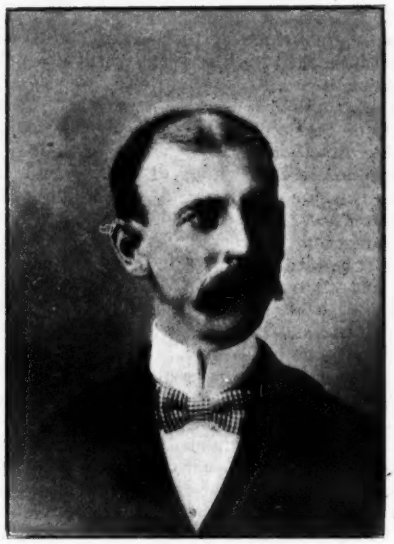
Although somewhat reserved by nature, Mr. Weightman was one of the most unassuming of men, readily approachable, courteous and eminently just in all of his transactions.

He held to a remarkable degree the esteem and loyalty of the workmen under him, many of whom have virtually spent their lives in his service, and all of whom, without exception, mourn his death as that of a beloved father. As a chemist his reputation was world wide, and his knowledge was eagerly sought by those in need and never withheld.

He is survived by an only daughter, Mrs. R. J. C. Walker; a grandson, Aubrey H. Weighman, and several granddaughters, Mrs. R. W. Meirs, Mrs. John Strawbridge, Mrs. Nathaniel R. Norton, of New York, and two unmarried granddaughters.

JAMES H. ROGERS.

James Hatfield Rogers, one of Johnson & Johnson's best known city salesmen, was accidently killed at the Mount Morris railroad station, Mount Morris, N. Y., on August 20. His death was surrounded by the most distressing circumstances, and the news will be received by the deceased's very wide circle of friends and acquaintances in New York with genuine sorrow. Mr. Rogers had been called home on account of the death of his brother, a retired druggist, who lived at Second street and Fifth avenue, Williamsbridge, and had driven to the Mount Morris station from Geneseo to take the train. While his hand bag and other baggage was being removed from the back of the wagon, Mr. Rogers stood at the horse's head with his hands on the reins to prevent the horse from bolting at the approach of a train. As was feared, the horse became frightened and got beyond his control. Mr. Rogers was thrown violently to

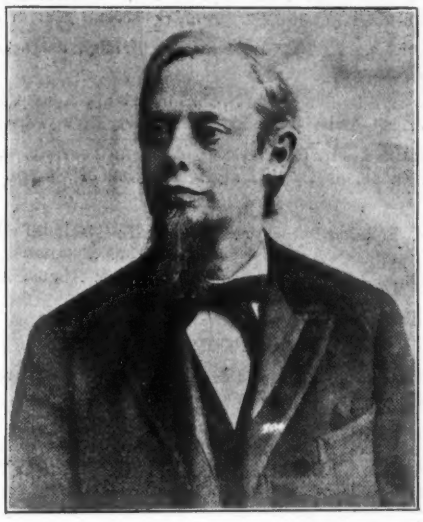


JAMES H. ROGERS.

the Act to Regulate Commerce; sai drates subject complainant died in a few hours. Thus it happened that James and his brother Edward were buried side by side.

Mr. Rogers was 44 years of age and a widower, his wife having died a little over three years ago. He is survived by three children, a son and two daughters. He was active in association work and had a particularly large number of friends among the alumni of the New York College of Pharmacy, as he took an active interest in the various movements inaugurated by the Alumni Association.

In the course of a generous and feeling tribute of affection and esteem prepared and sent to the deceased's customers by his employers, the firm of Johnson & Johnson, the following facts are given regarding his career: He was at one time engaged in a retail business with his brother, Edward Rogers, at Spring and Bleecker streets, New York, and later at Third avenue and 108th street. He afterward engaged in business at Geneseo, N. Y., and later became connected with Grosvenor & Richards as salesman. In 1887 he engaged with Johnson & Johnson and remained in their service until his death. "Johnson & Johnson find it impossible to express their appreciation and regard for Mr. Rogers for his most valuable services," the memorial tribute concludes, "he being at the time of his death the oldest member of the salesmen staff, in time of service. He was more than an ordinary salesman, he was an advisory, an efficient counsel and a warm personal friend of the entire staff. His services and his life will long remain as a pleasant memory to all."



WM. H. ROCKWOOD.

William H. Rockwood, vice-president of the Fuller & Fuller Company, wholesale druggists, of Chicago, who died suddenly in his carriage while driving from Higman Park to Benton Harbor, Mich., on Wednesday, August 17, was 62 years old and a native of New York, removing to Chicago in 1865. On the incorporation of the Fuller & Fuller Company, in 1884, he was made vice-president of the company, a position he held for the intervening years, up to the time of his death. He was regarded as one of the leading wholesale druggists of Chicago, both by reason of term of service and ability as a manager. The passing of another veteran of the wholesale drug trade of Chicago is deeply regretted by his many friends and acquaintances in the trade.

DIED.

BROWN.—In Madison, N. J., on Friday, August 26, William Thompson Brown, in the forty-sixth year of his age.

CHRISTIANI.—In Fulda, Germany, on Wednesday, August 3, Theodore Christiani, formerly of Washington, D. C., in the seventy-second year of his age.

COLE.—In Bellingham, Wash., on Monday, August 15, Warren H. Cole, in the twenty-seventh year of his age.

GALLUP.—In Grand Rapids, Mich., on Saturday, August 20, James Gallup, in the eighty-fourth year of his age.

HUGHES.—In New York, on Monday, August 22, William Hughes, in the forty-first year of his age.

JONES.—In Le Mars, Iowa, on Thursday, August 11, Charles H. Jones, in the thirty-seventh year of his age.

LANEY.—In Baltimore, Md., on Friday, August 19, Hervey Laney, in the fifty-fourth year of his age.

MCKEOWN.—In Warren, Ohio, on Tuesday, August 16, W. W. McKeown, in the sixty-ninth year of his age.

OSTER.—In Lancaster, Pa., on Thursday, August 11, William H. Oster, in the twenty-seventh year of his age.

ROCKWOOD.—In Benton Harbor, Mich., on Wednesday, August 17, William H. Rockwood, in the sixty-second year of his age.

ROGERS.—In Williamsbridge, N. Y., on Friday, August 19, Edward Rogers, in the fifty-sixth year of his age.

ROGERS.—In Mount Morris, N. Y., on Saturday, August 20, James H. Rogers.

SPROAT.—In Taunton, Mass., on Friday, August 19, Clinton Sproat, in the fifty-second year of his age.

STEEVER.—In Harrisburg, Pa., on Tuesday, August 23, Aaron M. Steever, in the thirty-fifth year of his age.

VERMILLION.—In Salt Lake City, Utah, on Monday, August 22, W. S. Vermillion, in the twenty-fourth year of his age.

WEIGHTMAN.—In Philadelphia, Pa., on Thursday, August 25, William Weightman, in the ninety-second year of his age.

WHITMAN.—In Lyndon, Kan., on Friday, August 12, Prof. J. H. Whitman.

WRIGHT.—In Anglesea, N. J., on Friday, August 26, J. Edward Wright, of Bristol, Pa., in the thirty-fifth year of his age.

ZACHARIAS.—In Cumberland, Md., on Tuesday, August 16, John F. Zacharias, in the sixty-fourth year of his age.

B. F. Pritchard, the president of the National Association of Retail Druggists, has suffered a severe affliction in the sudden death of his wife at Greenville, Pa., on August 21.

DRUG INCORPORATIONS.

Certificates of incorporation have been filed since our last of the following new concerns:

Buzby Drug Company, Newark, N. J. Incorporators: Alfred W. Barnes, Joseph E. Buzby and Ida M. Buzby. Object: To manufacture and sell all kinds of drugs and proprietary medicines. Capital, $20,000.

Derma Company, New York. Directors: C. Bedford Allison, Theodore Lamson and A. W. Matthews. Object: To make medicinal preparations. Capital, $50,000.

John L. Thompson Manufacturing Company, Troy, N. Y. Incorporators: G. S. Thompson, North Hoosick; R. H. Thompson, James L. Thompson, H. W. Thompson, W. L. Thompson, of Troy; Derrick Lane and Walter Thompson, Jr., New York City. Object: Manufacture of patent medicines. Capital, $21,000.

Thomas Chemical Company, Paterson, N. J. Incorporators: H. Augustine Thomas, James B. Esty, and Harris I. Westerhoff. Capital, $150,000.

Tabard Inn Druggist Specialty Company, Camden, N. J. Incorporators: F. R. Hansell, W. F. Idell, George H. B. Martin and Joseph F. Cotter. Object: To deal, both wholesale and retail, in merchandise usually sold by druggists. Capital, $10,000.

Wallace Drug Company, Ozark, Ala. Incorporators: T. B. Wallace, J. M. Wallace and C. N. Wallace. Capital, $20,000.

An Epidemic of Hold-ups in Chicago.

Chicago, September 1.—There has been an epidemic of drug store hold-ups lately, because the police are kept busy watching strikers at the stock yards. C. A. Fisher, 2107 West Madison street, was robbed of $150 and his clerk was shot at. The store of the Cupid Drug Company, 1393 West Lake street, was robbed the next night. The store of Herman Diehl, 1238 West Lake street, was also looted. One of the boldest robberies was the hold-up of Andrew Scherer, the veteran druggist, at State and Division streets. Masked youths took everything from Mr. Scherer and his clerk, but failed to find $100 in Mr. Scherer's hip pocket.

The South Dakota Association.

With the election of officers on August 12 the South Dakota Pharmaceutical Association terminated a very successful convention at Mitchell. The following are the new officers: President, I. M. Helmey, Canton; first vice-president, O. A. Griffis, Aberdeen; second vice-president, Abbey J. Jarvis, Faulkton; secretary, E. C. Bent, Dell Rapids; treasurer, W. A. Nye, Salem. The next meeting of the association will be held at Aberdeen, beginning the second Tuesday in August, 1905.

The first loss is the smallest loss. The longer you wait the less goods are worth. A dollar invested in quick turning stuff soon becomes two dollars. In stickers that linger on the shelf a dollar quickly shrinks to 50 cents and by and by to nothing.

The Wisconsin Association.

The Wisconsin Pharmaceutical Association concludes its twenty-fourth annual meeting at Fond du Lac on August 3. The following officers were elected: President, T. H. Spence, La Crosse; first vice-president, H. L. Schultz, Milwaukee; second vice-president, A. E. Du Quez, Cashton; secretary, Henry Rollman, Chilton; treasurer, W. P. Clark, Milton. Madison was chosen as the place for holding the twenty-fifth jubilee meeting in 1905, E. E. Williams of that city being elected local secretary.

Indian Territory Pharmacy Commission.

Chief Justice Raymond of the United States Court of Appeals for the Indian Territory has appointed the following Territorial Board of Pharmacy: L. Mathews, Miami; F. Savage, Hartshorne; H. C. Cobb, Muskogee; H. D. Kniseley, Checotah; W. A. Strother, Tusla. Saturday, September 3, 1904, and Muskogee, I. T., were named as the time and place for the first meeting of the board for the purpose of electing a president, a secretary and a treasurer. The appointment of this board is in compliance with a special act of Congress passed at the last session and pharmacists who practice in Indian Territory must have a certificate from this board.

Bleaching Powder Explosions.

The Oil and Colormans Journal for August 20 contains an interesting note regarding the explosions which have occurred from time to time through the spontaneous decomposition of chlorinated lime, the bleaching agent which is popularly known as chloride of lime.

"An explosion which occurred a year or two back of a tin of chloride of lime on opening it, and over which there was considerable litigation, forcibly recalls a similar occurrence, which happened in the summer of 1858 to Prof. A. W. Hoffman. One morning on entering his laboratory, which he had left in perfect order on the previous evening, he was surprised to find the room in the greatest confusion. Broken bottles and fragments of apparatus lay about, several window panes were smashed, and all the tables and shelves were covered with a dense layer of white dust. The latter was soon found to be chloride of lime, and furnished without difficulty the explanation of this strange appearance.

"At the conclusion of the great exhibition of 1857 M. Kuhlman of Lille had made Professor Hoffman a present of the splendid collection of chemical preparations which he had contributed. The beautiful large bottles were for a long time kept as a collection. Gradually, however, their contents proved too great a temptation, and in the course of time all the substances had been consumed. Only one large bottle of about 10 liters capacity had resisted all attacks, and after many unsuccessful efforts—no one venturing to indulge in strong measures with the handsome vessel—the bottle had at last found a place on one of the highest shelves of the laboratory, where for years it had remained lost in dust and oblivion until it had forced itself back to recollection by so energetic an appeal. The explosion had been so violent that the neck of the bottle was projected into the area, where it was found with the stopper still firmly cemented into it.

"Professor Hoffman was not able to learn whether similar cases of the spontaneous decomposition of chloride of lime had been previously observed in chemical laboratories, but he afterward learned from M. Kuhlman that they occasionally occur in chloride of lime factories. According to Professor Hoffman, the cause of these explosions, it need hardly be remarked, is the accumulation of oxygen gradually evolved from the bleaching powder.

"Those who stock chloride of lime in lever-lid tins, &c., would do well to see that all their old stock of tins is sold before they started on the new, as otherwise it may happen that a few odd tins may be continuously carried over from year to year with disastrous results. It might be advisable also to stock the tins in a cool place; but, happily, accidents of this kind are few and far between."

Greater New York News.

J. H. Gerathy of McKesson & Robbins, has returned from his vacation.

A. C. Jenkins of the importing department of Parke, Davis & Co. has returned from a pleasant sojourn at Bar Harbor.

John Ferguson, of Ferguson Brothers, Philadelphia, called on friends in the local drug and chemical trade recently.

William J. Baird of the local branch of Powers & Weightman has returned from a month's vacation.

J. A. Fitzsimmons of Fitzsimmons, Gleeson & Co. has returned from an enjoyable outing at Lake Champlain.

Emil Levi, the American representative of C. F. Boehringer & Soehne, Mannheim, Germany, has returned from Europe.

The Franklin H. Kalbfleisch Company, manufacturing chemists of this city, has increased its capital from $500,000 to $1,000,000.

The Bushwick Pharmaceutical Association had a very succesesful outing at Distler's Park, Jamaica, Long Island, last Thursday afternoon.

H. S. Chatfield of Rogers & Pyatt is again at his desk, after an absence of five weeks, a part of that time having been spent in London.

Schieffelin & Co. have obtained judgment against the Merchant Marine Hospital Service and against Charles J. Hoerle for $142.73 and $26.92, respectively.

Justin Keith, who manages the Western interests of J. L. Hopkins & Co., was in the city a few days ago. He went from here on a business trip to Canada.

The firm of Manheimer & Eben, 28 Gold street, has been dissolved by mutual consent, Mr. Eben retiring. Mr. Manheimer will conduct the business at the same address, under the name of J. Manheimer.

Thomas Tyrer of the Stirling Chemical Work, Stratford, England, is in New York to attend the meeting of the Society of Chemical Industry. Mr. Tyrer was president of the society from 1895 to 1896 and has held some office in the society since its organization some 20 odd years ago.

The firm of Heron & Zinnel, who have conducted the business known as the Lakewood Pharmacy, at Lakewood, N. J., has been dissolved, Dr. A. M. Heron retiring, and William Zinnel continuing the business under the title of the Lakewood Pharmacy.

The printed volume of the Proceedings of the New York State Pharmaceutical Association for the year 1904 made its appearance last week and afforded evidence of the dispatch with which Secretary Swann means to dispose of his secretarial duties.

Miss Frances C. Allison, eldest daughter of William O. Allison, was married to Arnold M. Probst on Wednesday, July 20. Mrs. Probst is known to many of those who attend the annual meetings of the National Wholesale Druggists' Association, as she has attended several of these conventions.

The Board of United States General Appraisers has overruled the protest of importers against the payment of duty on ginseng root imported by Chinese firms at San Francisco. The Collector assessed duty at one-quarter of a cent per pound and 10 per cent. ad valorem. The importers claimed the goods were entitled to free entry as crude drugs.

Francis D. Millet, the noted artist of this city, has finished a life size portrait of the late William M. Warren, who was general manager of Parke, Davis & Co. The portrait has been sent to Detroit, where it will be placed in the directors' room at the firm's main offices. A life size portrait by the same artist has been placed in the manager's office at the New York branch.

A very clever idea in picture cards was on exhibition at Fred C. Schnibbe's pharmacy, 96 Kingston avenue, Brooklyn, last week. It consisted of a piece of deal board of the size of a postal card, on which the address was burned in with a pyrographic pencil. The reverse side bore the greeting: "Pound away, Fred! You'll get there. Bill." The figure of a donkey in transfer colors with the outline of a mortar and the caption "Druggist" underneath left it in doubt as to whether the addressor or the addressee was indicated.

Dr. W. C. Abbott, president of the Abbott Alkaloidal Company of Chicago, and Norman B. Harris, manager of the New York office, returned last week after a three months' European tour, during which they covered Ireland, the South of England, Switzerland, the southern portion of Germany, Holland and Belgium. The tourists had most delightful weather, as during all their stay on shore it did not rain a single day, though it rained occasionally at night. Both travelers returned looking much improved by and delighted with their outing.

WESTERN NEW YORK.

Erie County Elects Officers—Direct Contract Plan Indorsed—Price Cutting Goes Steadily On—Peruna Seeks to Stop Price Cuting—Tea and Coffee as Drug Store Side Lines.

(From our Regular Correspondent.)

Buffalo, September 1.—At the annual election of the Erie County Pharmaceutical Association, held in Buffalo yesterday, the following officers were chosen:

President—F. A. Darrin.
First Vice-President—Oscar Rydstrom.
Second Vice-President—C. E. Anthony.
Secretary—P. M. Lockie.
Treasurer—J. L. Perkins.
Delegate to N. A. R. D. Convention (St. Louis, October 10)—J. A. Lockie.

Delegate Lockie was instructed to advocate adoption of direct contract plan between manufacturers and retailers. While the Erie County association is making no effort to stem the tide of price cutting, it is watching the progress of this cut-price craze, and will take a hand in it as soon as any prospect of success appears. The chief obstacle at present is a department store which is fighting trading stamps, and will sign no agreement till they are thrown out. Still, there are signs of great weariness on part of stores that are trying to make profits on losing prices. One new store with a fixed expense of $50 a day is likely to be among the first to give up cutting.

The Peruna Drug Company, finding Buffalo one of the chief price-cutting centers—their preparation often being sold at 25 cents—has invited Delegate J. A. Lockie to a conference on the subject at Columbus, O., September 6, in the hope of devising some plan for adjusting prices. Of course, such a chance of advocating the direct contract plan will not be lost. R. K. Smither was invited, but declined to go, as he is not now a member of the Executive Committee of the N. A. R. D.

Buffalo retail druggists report no improvement in trade. Summer has been too cool for good sales of ice cream, soda water and such specialties, and cut prices have done the rest. Still, some profit has been made, and there is no sign of distress anywhere.

The Empire State Drug Company of Buffalo has declared a 6 per cent. dividend. As this is really a second profit on goods sold by the company's stockholders only, it is called especially good. Profits last year were laid out in machinery for increasing manufacturing facilities.

OUTLOOK ENCOURAGING.

Late reports from the Erie County Pharmaceutical Association find members very hopeful in regard to price agreement. It is said that the Hengerer department store talks of throwing out trading stamps, and then agreement is easy.

Enterprising Buffalo druggists are putting in tea and coffee, and say it will be common before long. It is said that one drug firm sold two thousand pounds of coffee in a month lately. The profit is good and packages are received weighed out, bearing the druggist's name.

NORTHERN OHIO.

Marked Improvement in Business—Newspapers Join in Condemning Sale of Narcotics—President Hopp Keeps Up His Activity.

(From our Regular Correspondent.)

Cleveland, Ohio, August 29.—Wholesale drug houses report an improvement in business since the first of this month, both in the city and throughout the territory they cover. They state that the increased sale is noticeable in a general line of goods and not in any one particular thing or class of articles. June and July were very dull, but up to that time the business had been good. The salesmen believe that from now on they will have a successful business. Politics do not seem to be cutting much of a figure in any line of business just now, and the resumption of operations among the iron and steel mills will soon have a good effect. Within the last two or three weeks the furnaces and men of the mills here, at Loran and in the Mahoning Valley have begun work, after being idle for some time. As Northern Ohio depends to a large extent on the iron and steel industry, this will make quite a difference.

AN ENCOURAGING STATEMENT.

Orr, Brown & Price, of Columbus, are quoted as saying that they do not anticipate anything but a good business this fall. They said the first six months of the year were ahead of the same period last year. During the summer months the collections have been a little slow, but always are, for that matter. Insurance, taxes and other things of the kind absorb the money just now, but they will improve during the fall months. The presidential election will not seriously disturb matters. The only effect the war in the East has had on the drug trade is to increase the price on a few articles that are produced right at the seat of the trouble. Camphor, which advanced to over $1 a pound, is now back to 65 cents, or within 10 cents of where it was before. Other things have gone through about the same experience, which is largely the result of bulling the market, rather than an increase due to the duty placed on the articles.

AGITATION AGAINST THE SALE OF NARCOTICS.

The Cleveland Plain Dealer had a strong editorial a few days ago on the sale of poisonous drugs, such as opium, cocaine and other things used as stimulants, by irresponsible persons. Officers in Toledo have discovered that certain persons have built up quite a large trade in such drugs. People who use them secretly prefer to buy of such people, because they feel that they are less liable to be discovered. It is understood that there are places in this city where these drugs can be purchased also, although it would probably be a hard matter to trace them down. This paper says the sale of such drugs to young people has a far more baneful effect than intoxicating liquors and there is little danger of making a law too severe for the punishment of those who engage in the business. Reputable druggists will not sell to persons for the uses designated, especially to young people, and they find their only source of supply among these persons who have no authority to handle drugs and poisons of any kind. The authorities are urged to keep a careful eye on this practice and break up every place that is engaged in it, sending the persons to prison or taking other measures that will prevent the ruin of the young people of the cities.

THE ANNUAL OUTING.

Everybody went to the annual outing of the Northern Ohio Druggists' Association, which was held at Avon Beach on August 19. The members turned out in large and enthusiastic numbers and the day proved an ideal one, both as to weather and fun. The various comic contests and athletic events were made particularly interesting by donations from a number of manufacturers, whose names are given below:

Swindell Bros., Solon Palmer, Andrew Jergens, Burroughs Bros. Mfg. Company, Mallinckrodt Company, Fairchild Bros. & Foster, Emerson Drug Company, Paris Medicine Company, Berdan & Co., Weideman Company, J. A. Rigby Cigar Company, Eldridge & Higgins Company, Shields & Wertheim, E. A. Schellentrager, McHenry Pharmacal Company, W. H. Haake, Bar-Ben Remedies Company, Hance Bros. & White, Orangeine Chemical Company, R. & W. Jenkinson Company, Newton Bate, Hull & Ruckel, Schuster Wine Company, Parke, Davis & Co., Eisenlohr Bros., Merck & Co., Duroy & Haines, Pompeian Mfg. Company, Wallace & Schwarz, Smith, Kline & French, Lilly & Co., Horlicks Food Company, Gerhart Mennen's Chemical Company, Sharp & Dohme, Baer-Wolf, Centaur Company, A. J. Wenham's Sons, Coca-Cola Company, Wm. Edwards Company, Allcock Mfg. Company, Bauer & Black, Zipp Mfg. Company, Cleveland Store Fixture Company, Pacific Coast Borax Company.

Results of the Pennsylvania Examination.

Secretary Charles T. George of the Pennsylvania Board of Pharmacy advises us that over half of the candidates who took the examinations at Williamsport July 19 passed. The total number examined was 155, and of these 87 have been granted certificates as registered pharmacists and qualified assistants. Fifty-six of the 101 who took the examination for registered pharmacists' certificates passed, and 31 of the 56 examined for qualified assistants' certificates were successful.

Certificates were awarded the following:

REGISTERED PHARMACISTS.

William McConaghy, Guy R. Eddy, Grant W. King, all of Allegheny; George L. Miller, Pittsburgh; Howard R. Lytle, Wilmerding; Francis M. Rockwell, Braddock; John A. Weber, Butler; Arthur W. Day, Washington; Charles H. McLaughlin, Lebanon; George C. Fegely, Reading; Milton C. Rohrbach, Hanover; Elmer D. Quickel, York; Sol. C. Seff, Northumberland; Arthur F. DeLong, Lewisburg; W. James McNamee, Williamsport; Harris Linn Taylor, Scalp Level; Warren S. Tyson, Norristown; George S. Jones, Frank J. Jones, George A. Brown, Frederick W. Terppe, all of Scranton; Walter W. Bender, Lock Haven; Jerry W. Leedom, Hollidaysburg; Lewis H. C. Gerould, Towanda; William M. Jones, Shamokin; John Marshall Huber, Mount Carmel; Walter O. Waite, Sugar Notch; Alfred James Benson, Austin; Ralph M. Kiefer, East Brady; John S. Eby, Newport; Philip W. Banker, Frederick D. Hileman, Charles Jerome Gallagher, William Pattison Gardner, Frederick Ralph Calley, all of Wilkes-Barre; George W. Truitt, Boothwyn; Gazer Victor Liptak, Freeland; Clyde Irvine Glover, Shenandoah; Burton P. Gerould, Bath, N. Y.; Edward C. Tracy, Waverly, N. Y.; Louis James Cohen, Brooklyn; William L. O'Brien, New York, N. Y.; Washington C. W. Zepp, Burlington, N. J.; Edgar King Ziegler, Frederick L. Geiger, B. Forrest Ginder, William Scalella, Edwin Henry Yeagley, Leopold L. Smith, Herman Weber, William B. Riegel, David F. Shull, Jr.; John C. Jones, William Hebden, John I. P. Troxell, Merrit B. Shultz, all of Philadelphia.

REGISTERED QUALIFIED ASSISTANTS.

Henry G. Reuwer, Harrisburgh; Raymond N. Graeff, Clarence Roy Fox, of Lebanon; Charles A. Weber, Reading; Raymond Greely, Joseph A. Shelley, Howard M. Cobb, August Henry Borr, Lionel C. Ernest, all of Scranton; Lee Elsworth Hyres, Northumberland; Kenneth L. Grange, Muncy; Charles Elmer Smith, Leechburg; William H. Reisch, Ashland; Harvey W. Northrup, Monroeton; John C. Gellagher, Shenandoah; Walter E. Dittmyer, Harper's Ferry, W. Va.; Richard A. Harris, Luzerne; Gerald Alston Snyder, Clarence Wallace Dooley, both of Williamsport; William Charles Bea, Hawley; Robert M. Ketty, Altoona; Johann Albert Norstedt, Jr., Mount Carmel; Guy Nathan Mumaw, Hazleton; Cyrus Reeves Siegfried, Warren; Edward Trust, Pittsburgh; Dora Rubin, Anthony Ricca, William A. Dreebelbis, Thomas F. A. O'Conner, Louis Green, William John Lenters, all of Philadelphia.

The next meeting of the board for the examination of applicants for registration will be held in the Philadelphia College of Pharmacy, Philadelphia, and in the Pittsburgh College of Pharmacy, Pittsburgh, on Saturday, October 15, 1904.

All applicants for registered pharmacists' certificates must make application for blanks and instructions at least ten days before the date of examination to the secretary, Charles T. George, Harrisburg, Pa., always stating where they desire to be examined, at Pittsburgh or Philadelphia. Applicants for registered pharmacist's certificate must be 21 years of age and have had four years' experience in the retail drug business, and qualified assistants must be 16 years of age and have had two years' experience in the retail drug business.

THE SOUTH.

Satisfactory Progress Being Made in Arranging for the N. W. D. A Meeting—Attendance Expected to Break All Records—Newspaper Offers a Free Scholarship at the New Orleans College of Pharmacy.—N. O. Association Names Delegates for St. Louis.

(From our Regular Correspondent.)

New Orleans, La., August 29.—The several sub-committees appointed by Chairman Arthur R. Parker, of the general committee in charge of the arrangements for the convention of the National Wholesale Druggists' Association, are at work attending to their respective duties. Already a programme has been roughly sketched, and, it is thought, will be shortly adopted. This programme is not yet ready for publication and will not be so for the next 20 or 30 days. However, it was said by a number of the committeemen that matters were progressing satisfactorily and that everything possible was being done for the reception and entertainment of the visiting delegates. There are strong indications that the attendance at the coming convention will berak all records. Many druggists throughout the South who have never before attended a convention of the association have signified their intention of attending. From this is is drawn that the attendance will break all records. Chairman Parker is at present out of the city. He will not return for 15 days. At the end of that time he will take up his part of the work, and all arrangements will be completed before the convention is called to order in November.

A FREE SCHOLARSHIP.

One of the local afternoon papers has offered a free scholarship in the New Orleans College of Pharmacy, to be awarded the young man or woman who receives the most votes during the contest. There are now about 35 contestants, and the fight is still young. Before it closes a number of others will in all probability enter.

DELEGATES TO THE N. A. R. D.

The New Orleans Pharmaceutical Association at its meeting held Friday, August 19, elected George W. McDuff, C. D. Sauvinet, A. O. Kaczoroski, John E. Scott and M. T. Breslin delegates to the convention of the National Association of Retail Druggists. At the same meeting a resolution instructing the delegates to vote for the proposed increase of the per capita paid by each druggist, was adopted. The present per capita is $2. The New Orleans delegation will go instructed to vote for $4 as the minimum, and as much more as the National Association sees fit.

Besides appointing these delegates and adoping the resolution the association did little business at its meeting. Routine business was transacted, and regular reports were heard. Much interest having been manifested in the appointing of delegates there was a good attendance on hand.

MERE MENTION.

Kahn, Weil & Co., Limited, is the name of a new firm recently organized at Erwinville, La. From all accounts the new company is prospering.

Edmond Richard, the efficient pharmacist of the firm of Richard & Martina, Fort Donaldsonville, La., is out again after several days' illness.

It is understood Dr. J. A. Pujos, of Schriever, La., intends rebuilding his drug store which was destroyed by fire some months ago.

C. C. Rybiski, formerly employed at Donaldsonville, La., has moved to Lake Arthur, La., where he has established a store on his own account. He is said to be doing well.

Trade here is quiet. It is, however, holding up to the standard, and there are indications it will brighten up in a short time.

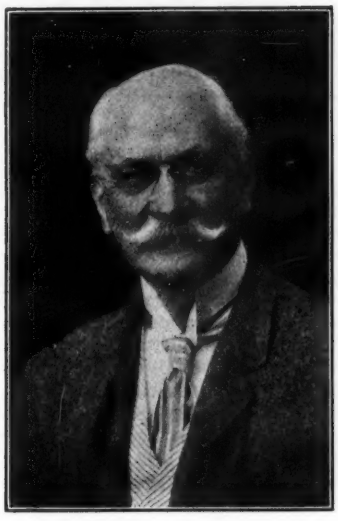
Dr. Phillip Asher, the popular dean of the College of Pharmacy here, returned last week from the World's Fair. He was there about two weeks, and says he spent a pleasant time.

Dr. Isaac Irwin, a 1904 Tulane graduate in medicine, is one of the late additions to the medical fraternity of Donaldsonville, La.

A. S. Breaud, formerly of Opelousas, La., has moved to Garyville, La., a new town on the Yazoo & Mississippi Valley road.

E. L. and L. B. Diez, the well-known uptown druggists, have returned from the World's Fair. Many of this city's prominent drug men have visited the Fair, and others are going. A number of them are in St. Louis now.

M. T. Breslin, president of the Orleans Pharmaceutical Association, is renovating and remodeling his drug store at St. Peter and Dauphine streets, this city. The building occupied by Mr. Breslin was a one-story affair. Another story is being added, and the store will be considerable enlarged.



Ephraim Plummer.

One of the Oldest and Most Valued Representatives of the Firm of Parke, Davis & Co.

Ephraim Plummer, the energetic subject of this sketch, first saw the light of day in 1845 at London, Ont. He had the ordinary experiences which fall to the lot of youngsters, and was apprenticed to an apothecary at the age of 13. Mr. Plummer states that there was a great disparity in the equipment and methods of the old time shops compared with those of the present day, but the work was of a practical kind and he gained much valuable information. Aniline dyes were unknown in those days, and our apprentice spent much of his time in parceling quantities of madder, logwood chips, copper sulphate and other materials used in dyeing. Later he got an insight into the details of the jobbing business by securing employment with a wholesale firm in Toronto. After another experience in the retail business he realized the necessity of a change of vocation, and he engaged in the collection of native drugs, marketing tons of slippery elm bark, mandrake, bloodroot, gold thread, &c. He then operated a store for about six years in London, Ont. Here the chase for the wary nickel and the accommodation of postage stamp and directory fiends brought on ill-health and he disposed of his business. For a few years he was free from the cares of the drug trade, until early in 1899 he became a knight of the grip, since which time he has been propounding the theory and practice of commercial and professional integrity as exemplified by the house of Parke, Davis & Co. During his term of service he has traveled through a greater portion of Canada and a majority of the States east of the Rockies. He has served in various capacities as necessity demanded, to the credit of himself and the success of his house. Mr. Plummer is still pushing the Parke, Davis & Co.'s interests with characteristic vigor, and at present is connected with the New York office.

The Drug and Chemical Market

The prices quoted in this report are those current in the wholesale market, and higher prices are paid for retail lots. The quality of goods frequently necessitates a wide range of prices.

Condition of Trade.

NEW YORK, September 3, 1904.

The drug and chemical trades have been generally quiet during the period under review. Dealers continue to display marked conservatism in making purchases, though in a few lines the movement gives no cause for complaint. In some lines the market has taken on a firmer tone, and we are able to record advances in staples like ergot, cantharides and certain of the seeds. The prevailing weakness in menthol is difficult to account for considering the situation at primary sources of supply. The indications for the fall are regarded as favorable for increased activity. The principal fluctuations of the past fortnight are noted below:

HIGHER.	LOWER.
Ergot,	Menthol,
Cantharides, Russian.	Codliver oil,
Nux vomica,	Gentian,
Santonin,	Jalap,
Sassafras bark,	Cascara sagrada,
Sassafras oil,	Spermaceti.
Celery seed,	
Coriander seed,	
Fenugreek seed,	
Buckthorn bark,	
Bloodroot,	
Dandelion root,	
Arnica flowers,	
Opium,	

Drugs.

Alcohol, both grain and wood, are without change of consequence, either as regards price or demand; values are maintained at the full range established by the combination of producers, grain being quoted at $2.45 and $2.47, and wood at 60c to 65c.

Arnica flowers are offered with some reserve in view of the scarcity of stock supplies, and the better grades are held at an advance to 9½c to 10c.

Balsams.—Copaiba is being purchased freely in small quantities, Central American being given the preference, and values appear well sustained at the range of 31c to 35c. Para is a trifle neglected, but 35c to 37c is yet named, as to quality and quantity. Fir, Canada, is quoted at $3.40 to $3.60, and Oregon at 90c to $1.00. Tolu is maintained at the previous range, but sales are made in a limited jobbing way only.

Barks.—Buckthorn is irregular and quotations range from 5⅞c to 7c. Cascara sagrada is in better supply. Large shipments of the 1904 crop have recently come to hand and offer at 8½c in carload lots; sales of old bark have been made up to 16c, while last year's crop is held at 10c. Sassafras is firmer and higher, owing to scarcity, dealers now asking 11c to 12c. Wild cherry is quiet, but values are well sustained at the previous range of 5½c to 7½c, as to quality.

Buchu leaves, short, are receiving increased attention, and values are steady at 16c to 18c.

Calendula flowers show increased firmness, with old crop goods on spot quoted at 24c to 26c and new crop to arrive up to 40c; very little is coming forward.

Cantharides, Russian, continue to meet with increased attention, and holders offer sparingly at an advance to $1.00, in the face of the limited available supply. Chinese are quiet and nominally unchanged at 37½c to 39c.

Chamomile flowers continue in moderate jobbing demand and firm at 11½c to 15c for new crop, and old German at 9c to 9½c. Roman held to 10c to 16c, as to quantity and quality.

Codliver oil is selling in a small retail way only, and the tone of the market is weak, with $44.00 now openly quoted for one brand.

Cuttlefish bone is irregular and unsettled, owing to competition, with Trieste held at 15c to 16c and Jeweler's, small and large, quoted at 46c to 54c and 45c to 50c, respectively.

Ergot continues on the upward grade and some speculative business is reported to have taken place, following the receipt of cable advices confirming previous reports of a rising market abroad. While a few lots of Russian might be had at 39c, the general asking price is 40c, and Spanish is quoted at 41c to 42½c.

Coca leaves are in limited jobbing demand only, but values are well sustained for Truxillo at the range of 16½c to 18c, as to quality and quantity; Huanuco held at 28c to 30c.

Guarana is quite inactive at the moment, but prices are nominally unchanged at the range of 65c to 67½c, as to quantity.

Juniper berries are without improvement, the trade requirements being yet small and unimportant at the current range of 2c to 2¼c, as to quality and quantity.

Lycopodium is rather neglected, but prices are well maintained, in view of the firm position of foreign markets and scarcity of spot supplies; we quote 69c to 70c, as to brand.

Manna remains quiet and the market is easier, though prices are quotably unchanged; large flake held at 45c to 50c; small flake, 26c to 28c, and sorts at 24c to 25c.

Menthol still shows an unsettled market, and it is difficult to give quotations. The downward tendency which set in a month or so ago has persisted, and while the open quotations of the market have not fallen below $3.45 it is well known that business could be done for less on a firm bid. Sales in a limited jobbing way are making at $3.50. The market is disturbed by competition and the freer offerings of supplies from primary sources. Some in the trade believe that Japan is unloading supplies because the Government needs the money.

Nux vomica is attracting rather more attention and sales have been fairly numerous since our last, leading to increased firmness and an advance on quotations to 2½c to 3c.

Opium is doing rather better, the receipt of firmer cables from Smyrna influencing local holders to advance the inside quotation on cases to $2.67½ and broken lots at $2.70 to $2.72½. Powder is unchanged, at $3.30 to $3.35, as to test, quantity and seller. What little demand existed prior to the advance has now been checked.

Quinine has been in rather better demand the past fortnight, the bulk of the business, however, being between manufacturers and importers. Outside business is practically suspended, owing to the lack of difference between the quotations from second hands and the prices of the makers. While manufacturers' quotations are unchanged, on the basis of 21c for bulk in 100 ounce tins, outside holders are turning down orders for German or Java below 21c.

Santonin is held with increased firmness, in the face of stronger advices regarding the position of the raw material, the crop of Russian wormseed being reported short. Meanwhile, sales are making at the former range of $7.70 to $7.90 for crystals and $7.90 to $8.10 for powdered, as to quantity. As we go to press word is received that the expected advance in values has materialized. Santonin crystals are now quoted at $8.05 for 25-lb. lots and $8.10 for smaller quantities; powdered is held at $8.25 to $8.30, as to quantity. These figures mean an advance of 35c a lb.

Spermaceti has weakened in the interval and quotations for block and case are fractionally lower, the former being held at 20c to 20½c and the latter from 20½c to 21c.